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DEPARTMENT OF THE INTERIOR

March 3, 1849

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March 3, 1849

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1989

DEPARTMENT OF THE INTERIOR
MANUEL LUJAN, Jr., *Secretary*

U.S. GEOLOGICAL SURVEY
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BULLETINS

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- Chapter A. Geological appraisal, by G. L. Snyder, U.S. Geological Survey. p. 13-55.
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B 1740-E. OREGON. Mineral resources of the Rincon Wilderness Study Area, Harney County, Oregon, by D. B. Vander Meulen, Donald Plouff, H. D. King, U.S. Geological Survey; R. T. Mayerle and R. L. Rains, U.S. Bureau of Mines. 1988. p. E1-E14. (Mineral resources of wilderness study areas; Steens Mountain-Rincon region, Oregon.)

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B 1743-B. OREGON. Mineral resources of the North Pole Ridge Wilderness Study Area, Sherman and Gilliam counties, Oregon, by S. A. Minor, J. A. Ach, J. G. Frisken, R. J. Blakely, U.S. Geological Survey; and H. W. Campbell, U.S. Bureau of Mines. 1988. p. B1-B18. (Mineral resources of wilderness study areas; John Day region, Oregon.)

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Geology and petroleum resources of the Barents-northern Kara shelf, U.S.S.R. and Norway, by Gregory Ulmishek, U.S. Geological Survey. p. 63-64.

Stratigraphy and facies analysis of Tertiary units, western Medicine Lodge Basin, Montana, by J. N. Weaver, U.S. Geological Survey. p. 64.

Indigenous sources of fossil fuels, Sahel region of North Africa, by J. N. Weaver, M. J. Bergin, M. E. Brownfield, and E. R. Landis, U.S. Geological Survey. p. 64-65.

Paleobotanical composition of some Pennsylvanian coal beds from the central Appalachian Basin as an indication of paleoclimate, by R. B. Winston and R. W. Stanton, U.S. Geological Survey. p. 65-66.

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

TWI 02-D2. Application of seismic-refraction techniques to hydrologic studies, by F. P. Haeni. 1988. 86 p. (Supersedes Open-file report 84-746.)

TWI 06-A1. A modular three-dimensional finite-difference ground-water flow model, by M. G. McDonald, and A. W. Harbaugh. 1988. 576 p. (Supersedes Open-file report 83-875.)

YEARBOOKS

United States Geological Survey yearbook, fiscal year 1986. 1987. 145 p.

United States Geological Survey yearbook, fiscal year 1987. 1988. 174 p.

GENERAL INTEREST PUBLICATIONS

General Interest Publications briefly summarize, for nontechnical readers, the latest information on major topics in the earth sciences about which the Survey receives frequent inquiries from the general public. This series of booklets, brochures, leaflets, and essay reprints are written by Survey scientists and cover topics such as earthquakes, energy resources, ground water, landforms and land use, marine geology, rain, rocks and mineral resources.

Geologic time, by W. L. Newman. 1988. 20 p.

Ground water and the rural homeowner, by R. M. Waller. 1988. 37 p.

U.S. Geological Survey; earth science in the public service. 1987. 28 p.

Periodicals

EARTHQUAKES AND VOLCANOES

For a complimentary copy write to Earthquakes and Volcanoes, U.S. Geological Survey, 904 National Center, Reston, VA 22092.

Earthquakes and Volcanoes, v. 19, no. 2. 1987. p. 37-84.

Earthquakes and Volcanoes, v. 19, no. 3. 1987. p. 85-124.

Earthquakes and Volcanoes, v. 19, no. 4. 1987. p. 125-156.

Earthquakes and Volcanoes, v. 19, no. 5. 1987. p. 157-188.

PRELIMINARY DETERMINATION OF EPICENTERS

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Single copies of monthly issues may be purchased only from U.S. Geological Survey, Books and Open-File Reports, Federal Center, Box 25425, Denver, CO 80225.

Preliminary determination of epicenters. Monthly listing for June 1987. 24 p.

Preliminary determination of epicenters. Monthly listing for July 1987. 28 p.

Preliminary determination of epicenters. Monthly listing for August 1987. 24 p.

Preliminary determination of epicenters. Monthly listing for September 1987. 24 p.

Preliminary determination of epicenters. Monthly listing for October 1987. 28 p.

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Preliminary determination of epicenters. Monthly listing for January 1988. 36 p.

Preliminary determination of epicenters. Monthly listing for February 1988. 28 p.

Preliminary determination of epicenters. Monthly listing for March 1988. 28 p.

Preliminary determination of epicenters. Monthly listing for April 1988. 24 p.

Preliminary determination of epicenters. Monthly listing for May 1988. 28 p.

Miscellaneous and Special Books

GEOGRAPHIC NAMES INFORMATION SYSTEM (GNIS)

The Geographic Names Information System currently consists of approximately two million name entries with information about the feature name and category and its geographic location by coordinates, county, and USGS topographic maps. The name file was developed from published 7.5-minute topographic maps. In areas where 7.5-minute maps have not been published, 15-minute maps or 1:250,000-scale maps provided basic name data.

Alphabetical listings are available for each State, territory and outlying area. These preliminary gazetteers list only those names found on the topographic maps of the U.S. Geological Survey. Two topical listings are available: a national listing of populated places and an abridged version of all States, territories and outlying areas, which contains about 40,000 populated places, other administrative places, and major physical features. Many of these files are also available in microfiche.

Other computer listings, specialized searches, and computer tapes may also be purchased.

GNIS, developed by Branch of Geographic Names, Office of Geographic and Cartographic Research, National Mapping Division, is the basis for Professional Paper 1200. The first chapter, P-1200-NJ (New Jersey) was published in 1982 (revised 1983). Each State, territory, and outlying area will be published as a separate chapter after further research and compilation. All other Federal sources, most State sources and other pertinent materials as well as historical documents are researched to complete the requirements for the National Names Depository. Additional published gazetteers include Delaware, Kansas and Arizona; and Oregon, South Dakota, North Dakota, Indiana, Iowa and Florida are complete and in various stages of printing and editing. State files in compilation include Alabama, Mississippi, Massachusetts, Utah, Pennsylvania and Rhode Island. The interim materials described may meet the needs of a wide variety of potential users until all chapters have been published.

Products may be ordered from U.S. Geological Survey, NCIC, 507 National Center, Reston, Virginia 22092. Telephone (703) 860-6045.

Information may be requested from U.S. Geological Survey, Manager GNIS, 523 National Center, Reston, Virginia 22092. Telephone (703) 648-4544.

OTHER SPECIAL BOOKS

Maps for America, by M. M. Thompson. 1988. 265 p. (Cartographic products of the U.S. Geological Survey and others. Third edition.)

CATALOGS

PENNSYLVANIA, NEW JERSEY. List of U.S. Geological Survey geologic and water-supply reports and maps for Pennsylvania and New Jersey. 1988. 239 p.

UTAH. List of U.S. Geological Survey geologic and water-supply reports and maps for Utah. 1988. 310 p.

Publications of the U.S. Geological Survey, 1987. 1988. 408 p.

WATER-RESOURCES INVESTIGATIONS REPORTS

"Water-Resources Investigations Report" (WRI) in this listing is applied to reports that are of an interpretative nature made available to the public outside the formal USGS publications series. WRI's are not reproduced and distributed in quantity as are formal USGS publications, but are available for public inspection at the indicated depositories.

The following WRI reports are available from the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Denver, CO 80225 (telephone 303-236-7476). For specific ordering instructions, please refer to "Reports Available Only Through the Books and Open-File Reports Section" under "Open-File Reports." When ordering, use the WRI number preceding each item, and do not mix orders for WRI reports and open-file reports with other Geological Survey products.

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Wb	U.S. Department of the Interior, Natural Resources Library, Gifts and Exchange Section, 18th and C Sts., NW, Washington, DC 20240.

WRI 82-4010. WASHINGTON. Ground-water hydrology of the Toppenish Creek basin, Yakima Indian Reservation, Washington, by J. A. Skrivan. 1987. 47 p. (NC, Da, M, Wb, SF, LA, S; USGS, WRD, 1201 Pacific Ave., Suite 600, Tacoma, WA 98402; USGS Library, Room 656, West 920 Riverside, Spokane, WA 99201.)

WRI 82-4105. WYOMING, MONTANA. Evapotranspiration rates at selected sites in the Powder River basin, Wyoming and Montana, by L. W. Lenfest, Jr. 1987. 23 p. (NC, Da, M, Wb, Db, T, U; USGS, WRD, Room 4007, 2120 Capitol Ave., Cheyenne, WY 82003.)

WRI 82-4117. WYOMING. Hydrology of the White Tail Butte area, northern Campbell County, Wyoming, by M. E. Lowry, and J. G. Rankl. 1987. 47 p. (NC, Da, M, Wb, Db, T, U; USGS, WRD, Room 4007, 2120 Capitol Ave., Cheyenne, WY 82003.)

WRI 83-4099 Documentation of computer program VS2D to solve the equations of fluid flow in variably saturated porous media, by E. G. Lappala, R. W. Healy, and E. P. Weeks. 1987. 184 p. (NC, Da, M, Wb.)

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WRI 84-4081. CALIFORNIA. Geohydrology of the Antelope Valley area, California, and design for a ground-water-quality monitoring network, by L. F. Duell, Jr. 1987. 72 p., 3 over-size sheets. (NC, Da, M, Wb, SF, LA; USGS, WRD, 2800 Cottage Way, Federal Bldg., Room W-2234, Sacramento, CA 95825; and 5201 Ruffin Road, Suite F, COC Annex, San Diego, CA.)

WRI 84-4092. WYOMING. Statistical summary of the chemical quality of surface water in the Powder River coal basin, the Hanna coal field, and the Green River coal region, Wyoming, by D. A. Peterson. 1988. 109 p., 1 over-size sheet. (NC, Da, M, Wb, Db, U; USGS, WRD, Room 4007, 2120 Capitol Ave., Cheyenne, WY 82003.)

WRI 84-4111. MINNESOTA. Hydrogeologic and water-quality characteristics of the Red River-Winnipeg Aquifer, northwestern Minnesota, by J. F. Ruhl, and D. G. Adolphson. 1986. 2 over-size sheets. (NC, Da, M, Wb; USGS, WRD, 702 Post Office Bldg., St. Paul, MN 55101.)

WRI 84-4165. ILLINOIS. Hydrogeology of the Cambrian-Ordovician aquifer system at a test well in northeastern Illinois, by J. R. Nicholas, M. G. Sherrill, and H. L. Young. 1987. 30 p. (NC, Da, M, Wb, Wa; USGS, WRD, Champaign County Bank Plaza, 102 East Main St., 4th Floor, Urbana, IL 61801.)

WRI 84-4315. MASSACHUSETTS. Estimated water and nutrient inflows and outflows, Lake Cochituate, eastern Massachusetts, 1978-79, by F. B. Gay. 1984. 59 p. (NC, Da, M, Wb; USGS, WRD, 150 Causeway St., Suite 1309, Boston, MA 02114-1384.) (A limited number of copies are available from USGS, WRD, 150 Causeway St., Suite 1309, Boston, MA 02114-1384.)

WRI 84-4324. LOUISIANA. Hydrology of Fritchie Marsh, coastal Louisiana, by E. L. Kuniansky. 1985. 23 p., 4 over-size sheets, scale 1:22,500 (1 inch = about 1,800 feet). (Da, M, NC, Wb, T.)

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WRI 85-4239. IOWA. Hydrology of the alluvial, buried channel, basal Pleistocene and Dakota aquifers in west-central Iowa, by D. L. Runkle. 1985. 111 p., 4 over-size sheets; sheets 1-3, scale 1:250,000 (1 inch = about 4 miles). (NC, Da, M, Wb; USGS, WRD, 400 South Clinton St., Room 269, Federal Bldg., P.O. Box 1230, Iowa City, IA 52244.)

WRI 85-4269. PUERTO RICO. Hydrology and water quality of the principal springs in Puerto Rico, by Senén Guzmán-Ríos. 1988. 30 p. (NC, Da, M, Wb; USGS, WRD, GSA Ctr., Bldg. 652, Highway 28, km 7.2, Guaynabo, PR 00657.)

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WRI 85-4286. LOUISIANA. Simulation of the effect of U.S. Highway 90 on Pearl River floods of April 1980 and April 1983 near Slidell, Louisiana, by J. J. Gilbert, and D. C. Froehlich. 1987. 47 p. (NC, Da, M, Wb, T.)

WRI 85-4288. NEW YORK. Hydrogeology of the southwestern part of the Town of Hempstead, Nassau County, New York, by R. K. Krulikas. 1985. 20 p., 6 over-size sheets. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1669, Albany, NY 12201.)

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WRI 85-4314. WYOMING. Analysis of sediment production from two small semiarid basins in Wyoming, by J. G. Rankl. 1987. 27 p. (NC, Da, M, Wb, Db, T, U; USGS, WRD, Room 4007, 2120 Capitol Ave., Cheyenne, WY 82003.)

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WRI 86-4015. NEVADA. Geohydrology of rocks penetrated by test well USW G-4, Yucca Mountain, Nye County, Nevada, by D. H. Lobmeyer. 1986. 38 p. (NC, Da, M, Wb, Db, LA; USGS, WRD, 1500 East Tropicana, Suite 114, Las Vegas, NV; and Nuclear Hydrology Program, Bldg. 53, Room H2115, Denver Federal Ctr., Denver, CO 80225.)

WRI 86-4017. UTAH. Hydrologic monitoring of selected streams in coal fields of central and southern Utah; summary of data collected, August 1978-September 1984, by Don Price, and G. G. Plantz. 1987. 102 p., 1 over-size sheet. (NC, Da, M, Wb, U, Db; USGS, WRD, Room 1016 Administration Bldg., 1745 West 1700 South, Salt Lake City, 84104.)

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WRI 86-4029. TENNESSEE. Cluster analysis of phytoplankton data collected from the National Stream Quality Accounting Network in the Tennessee River basin, 1974-81, by D. W. Stephens, and J. B. Wangsgard. 1986. 48 p.

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WRI 86-4045. NEW YORK. Detection of contaminant plumes in ground water of Long Island, New York, by electromagnetic terrain-conductivity surveys, by T. E. Mack, and P. E. Maus. 1986. 39 p. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1669, Albany, NY 12201.)

WRI 86-4047. A dual porosity model for simulating solute transport in oil shale, by K. C. Glover. 1987. 88 p. (NC, Da, M, Wb, Db, T, U; USGS, WRD, Room 4007, 2120 Capitol Ave., Cheyenne, WY 82003.)

WRI 86-4059. LOUISIANA. Generalized potentiometric surface of the Catahoula Aquifer in central Louisiana, 1980, by Angel Martin, Jr., and C. D. Whiteman, Jr. 1986. 1 over-size sheet, scale 1:500,000 (1 inch = about 8 miles). (NC, Da, M, Wb, T; USGS, WRD, 6554 Florida Blvd., Baton Rouge, LA 70896.) A limited number of copies are available from USGS, WRD, 6554 Florida Blvd., Baton Rouge, LA 70896.

WRI 86-4070. NEW YORK. Ground-water flow and solute transport at a municipal landfill site on Long Island, New York; Part 1, Hydrogeology and water quality, by E. J. Wexler. 1988. 52 p., 1 over-size sheet. (NC, Da, M, Wb; USGS, WRD, P.O. Box 1669, Albany, NY 12201.)

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- Introduction, by W. W. Hays. p. 1.
- Welcome, by Alan Woods. p. 3-4.
- Session I; Global aspects of earthquake hazard, risk, investment, and insurance, moderated by K. V. Steinbrugge. p. 5-29.
- Reducing earthquake risk throughout the world, by J. V. Taft. p. 7-11.
- Strategies for earthquake risk management, by D. L. Peck. p. 13-17.
- Insurance considerations for industrial facilities, by S. J. Couvillon. p. 19-20.
- The potential for financial losses, by D. W. Ehlert. p. 21-22.
- Mobilizing underwriters' confidence and capability through usable information, by E. A. Simner. p. 23-25.
- Session II; The global earthquake threat to new and existing financial investment and development programs, moderated by D. A. Ink. p. 31-51.
- The nature of the global earthquake risk problem, by S. T. Algermissen. p. 35-38.
- Earthquake threat and development programs, by A. G. Kreimer. p. 39-41.
- Regional development; incorporating natural hazard management issues into response and recovery programs and projects, by K. P. Rodgers. p. 43-46.
- Earthquake hazard reduction program of the Department of State, by P. E. Gurvin. p. 47-49.
- An international decade for natural disaster reduction, by Frank Press. p. 53-61.
- Session III; Using the earthquake knowledge base, moderated by Ludovic van Essche and B. M. Rouhban. p. 63-96.
- Discussion of hazard, exposure, vulnerability, and risk, by Ludovic van Essche. p. 65-66.
- Forecasting large and great earthquakes, by William Spence, *prepared with* S. P. Nishenko. p. 67-69.
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- Mitigation of earthquake hazards in Japan, by R. N. Wright. p. 87-90.
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- Earthquake hazard assesement; Southern Europe and Saudi Arabia, by S. T. Algermissen. p. 95-96.
- Session IV; Elements of an initiative to provide the required knowledge to optimize strategic planning and risk management with respect to the earthquake hazard throughout the world, moderated by F. E. McClure. p. 97-120.
- The knowledge utilization process, by W. W. Hays. p. 99-103.
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- Improved practices in design and construction; codes, by E. V. Leyendecker. p. 109-111.
- Networking the Worldwide Earthquake Risk Management Project, by C. F. Shearer, and F. M. Cole. p. 113-116.
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- Discussion by task force and panel D, moderated by F. E. McClure, *with participants* R. M. Chung, M. P. Gaus, A. M. Giesecke, J. V. Grieco, A. G. Kreimer, Jelena Pantelic, R. J. Roth, Jr., B. M. Rouhban, Ludovic van Essche, and R. N. Wright. p. 121-143.
- Closing remarks, by D. L. Peck, and J. V. Taft. p. 145-149.

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OF 88-0387-A. GSLXY version 1.0; a prototype program to draw cross sections and plot plan views from drill hole data on an X, Y, coordinate system using an IBM PC (or compatible) microcomputer, digitizer, and plotter, by G. I. Selner, and R. B. Taylor. 1988. 71 p. (NC, Da, M.)

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OF 88-0389. ALASKA. Geologic interrelations relative to gas hydrates within the North Slope of Alaska, by T. S. Collett, K. J. Bird, K. A. Kvenvolden, and L. B. Magoon. 1988. 150 p. (NC, Da, M, A, S, SF, LA; Alaska Div. Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709; U.S. Dep. of the Interior, Alaska Resource Library, 701 "C" St., Box 36, Anchorage, AK 99513.)

OF 88-0391. KANSAS, OKLAHOMA, TEXAS. Analyses of natural gases from Anadarko Basin, southwestern Kansas, western Oklahoma, and Texas Panhandle, by D. D. Rice, C. N. Threlkeld, and A. K. Vuletich. 1988. 5 p. (NC, Da, M, Db; Kansas Geol. Surv., 1930 Constant Ave., Campus West, Univ. of Kansas, Lawrence, KS 66046.)

OF 88-0392. MASSACHUSETTS. A geologic overview of Cape Cod; a field trip guide, by R. N. Oldale. 1988. 10 p. (NC, Da, M.)

OF 88-0393. Data on the geochemistry of surface sediments of the Ebro shelf and slope, northeastern Spain, by J. V. Gardner, W. E. Dean, A. J. Bartel, E. L. Brandt, E. E. Engleman, K. C. Stewart, C. L. Stone, and J. E. Taggart. 1988. 14 p. (NC, Da, M.)

OF 88-0394. COLORADO, UTAH. Analytical results and sample locality map of stream-sediment and heavy-mineral-concentrate samples from the Diamond Breaks Wilderness Study Area (CO-010-214/UT-080-113), Moffat County, Colorado, and Daggett County, Utah, by T. A. Delaney, D. E. Detra, J. E. Kilburn, R. B. Vaughn, and M. S. Allen. 1988. 13 p., 1 over-size sheet, scale 1:62,500 (1 inch = about 1 mile). (NC, Da, M, Db, U; Utah Geol. and Mineral Surv., 606 Black Hawk Way, Salt Lake City, UT 84108.)

OF 88-0395. ALASKA. A bibliography of selected geologic and engineering-geologic literature of northern Alaska (Arctic coastal plain and northern foothills), by J. P. Galloway. 1988. 35 p., one 5 1/4 inch diskette. (NC, Da, M, A, S, SF, LA; Alaska Div. Geol. and Geophys. Surv., 794 University Ave., Suite 200, Fairbanks, AK 99709; U.S. Dep. of the Interior, Alaska Resource Library, 701 "C" St., Box 36, Anchorage, AK 99513.) (Diskette available only through the Books and Open-File Reports Section.)

OF 88-0396. MISSOURI. ICP-AES analytical results for Precambrian basement rocks in or near Missouri, by E. L. Mosier, and J. M. Motooka. 1988. 43 p. (NC, Da, M; Dep. of Natural Resources, Div. of Geol. and Land Surv., 111 Fairgrounds Road (P.O. Box 250), Rolla, MO 65401.)

OF 88-0397. GEORGIA. Isopach and structure contour maps of the Miocene and post-Miocene sediments in the Southeast Georgia Embayment, Florida-Hatteras Shelf, offshore Georgia, by Peter Popenoe, and J. S. Spalding. 1988. 12 p. (NC, Da, M.)

OF 88-0398. CALIFORNIA. Probabilities of large earthquakes occurring in California on the San Andreas Fault, by the Working Group on California Earthquake Probabilities. 1988. 62 p., (NC, Da, M, SF, LA; California Dep. of Conservation, Div. of Mines and Geol., Room 1341, Resources Bldg., 1416 9th St., Sacramento, CA 95814; 367 Civic Dr., Pleasant Hill, CA 94523-1997; and State Office Bldg., 107 South Broadway, Room 1065, Los Angeles, CA 90012.)

OF 88-0399-A. Geophysics Advisor Expert System, by G. R. Olhoeft. 1988. 2 p. (NC, Da, M.)

OF 88-0399-B. Geophysics Advisor Expert System, by G. R. Olhoeft. 1988. One 5 1/4 inch diskette. (NC, Da, M.)

OF 88-0400-A. New information resources of the U.S. Geological Survey Library System, January 1988. 1988. 60 p. (NC, Da, M, A, Db, NC, M, LA, S, U, SF, Wa; USGS, Room E146, 701 "C" St., Anchorage, AK 99513.)

OF 88-0400-B. New information resources of the U.S. Geological Survey Library System, February 1988. 1988. 69 p. (NC, Da, M, A, Db, NC, M, LA, S, U, SF, Wa; USGS, Room E146, 701 "C" St., Anchorage, AK 99513.)

OF 88-0400-C. New information resources of the U.S. Geological Survey Library System, March 1988. 1988. 94 p. (NC, Da, M, A, Db, NC, M, LA, S, U, SF, Wa.)

OF 88-0400-D. New information resources of the U.S. Geological Survey Library System, April 1988. 1988. 63 p. (NC, Da, M, A, Db, NC, M, LA, S, U, SF, Wa.)

OF 88-0400-E. New information resources of the U.S. Geological Survey Library System, May 1988. 1988. 65 p. (NC, Da, M, A, Db, NC, M, LA, S, U, SF, Wa.)

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OF 88-0401. GLIMPCE 1986 multichannel seismic-reflection profiles across the Midcontinent rift system in the Great Lakes, by J. C. Behrendt, and A. G. Green. 1988. 3 p. (NC, Da, M.) (Original records can be seen and studied at the USGS office, Woods Hole, MA 02543. Copies of the seismic-reflection profiles and the sidescan sonographs can be purchased only from the National Geophysical Data Ctr., NOAA-E64, 325 Broadway, Boulder, CO 80303; telephone 303-497-6338.)

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OF 88-0409. CALIFORNIA. The Southern California Network Bulletin, January-June 1987, by D. D. Given, L. K. Hutton, L. A. Stach, and L. M. Jones. 1988. 42 p. (NC, Da, M, SF, LA; California Dep. of Conservation, Div. of Mines and Geol., Room 1341, Resources Bldg., 1416 9th St., Sacramento, CA 95814; 367 Civic Dr., Pleasant Hill, CA 94523-1997; and State Office Bldg., 107 South Broadway, Room 1065, Los Angeles, CA 90012.)

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OF 88-0450-A. Geology and hydrocarbon assessment of the Blue Ridge, Province No. 132, by K. C. Bayer. 1988. 23 p. (NC, Da, M.)

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OF 88-0467. ARIZONA. Progress report on the ground-water, surface-water, and quality-of-water monitoring program, Black Mesa area, northeastern Arizona; 1987-88, by R. J. Hart, and J. P. Sottilare. 1988. 27 p. (NC, Da, M, Wb; USGS, WRD, Room 5A, Federal Bldg., 300 West Congress St., Tucson, AZ 85701; 3738 North 16th St., Suite E, Phoenix, AZ 85016; 1940 South 3rd Ave., Yuma, AZ 85364; and 2255 North Gemini Dr., Bldg. 3, Flagstaff, AZ 86001.)

OF 88-0471. IDAHO. Chemical and hydrologic data for selected thermal-water wells and nonthermal springs in the Boise area, southwestern Idaho, by H. W. Young, D. J. Parliman, and R. H. Mariner. 1988. 35 p. (NC, Da, M, Wb; USGS, WRD, 230 Collins Rd., Boise, ID 83702.)

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OF 88-0501. Program disk to accompany MAGMIX (Computers and Geosciences, 1988, v. 14, p. 213-228) for IBM PC/AT (or compatible) computers, by T. P. Frost, and J. R. Lindsay. 1988. 1 p., five 5 1/4 inch diskettes. (NC, Da, M.)

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OF 88-0509. CALIFORNIA. A bibliography of the Santa Maria Province and vicinity, south central coastal California, by Janice Heilbrunn-Tomson. 1988. 108 p. (NC, Da, M, SF, LA; California Dep. of Conservation, Div. of Mines and Geol., Room 1341, Resources Bldg., 1416 9th St., Sacramento, CA 95814; 367 Civic Dr., Pleasant Hill, CA 94523-1997; and State Office Bldg., 107 South Broadway, Room 1065, Los Angeles, CA 90012.)

OF 88-0510. COLORADO. The isotopic composition of ore lead of the Creede mining district and vicinity, San Juan Mountains, Colorado; text of a talk presented at the San Juan Mountains symposium to honor Thomas A. Steven; Rocky Mountain Section meeting of the Geological Society of America, May 2, 1987, Boulder, Colorado, by N. K. Foley, P. B. Barton, P. M. Bethke, and B. R. Doe. 1988. 24 p. (NC, Da, M, U, Db.)

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OF 88-0515. PMDRV; an RSX-11M/M-Plus device driver for the advanced computer communications ACP 5100/6100 communications interface, by L. M. Baker. 1988. 28 p. (NC, Da, M.)

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OF 85-0316. UTAH. Land use and land cover and associated maps for Salina, Utah. Lat 38° to 39°, long 110° to 112°. This data set consists of one map keyed to USGS topographic map Salina at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Salina at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 85-0318. NEW YORK, PENNSYLVANIA. Land use and land cover and associated maps for Elmira, New York; Pennsylvania. Lat 42° to 43°, long 76° to 78°. This data set consists of one map keyed to USGS topographic map Elmira at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Elmira at 1:250,000. (†USGS, Mid-Continent Mapping Ctr.(NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 85-0325. UTAH. Land use and land cover and associated maps for Huntington, Utah. Lat 39° to 39°30′, long 110° to 111°. This data set consists of one map keyed to USGS topographic map Huntington at 1:100,000 (1 inch = about 1.6 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Huntington at 1:100,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0011. ARKANSAS, OKLAHOMA. Land use and land cover and associated maps for Fort Smith, Arkansas; Oklahoma. Lat 35° to 36°, long 94° to 96°. This data set consists of one map keyed to USGS topographic map Fort Smith at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Fort Smith at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0012. MISSISSIPPI, ARKANSAS, LOUISIANA. Land use and land cover and associated maps for Greenwood, Mississippi; Arkansas; Louisiana. Lat 33° to 34°, long 90° to 92°. This data set consists of one map keyed to USGS topographic map Greenwood at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Greenwood at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0013. ARKANSAS, MISSOURI. Land use and land cover and associated maps for Harrison, Arkansas; Missouri. Lat 36° to 37°, long 92° to 94°. This data set consists of one map keyed to USGS topographic map Harrison at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Harrison at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

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OF 86-0015. ARKANSAS. Land use and land cover and associated maps for Little Rock, Arkansas. Lat 34° to 35°, long 92° to 94°. This data set consists of one map keyed to USGS topographic map Little Rock at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Little Rock at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0016. MISSOURI, ARKANSAS. Land use and land cover and associated maps for Poplar Bluff, Missouri; Arkansas. Lat 36° to 37°, long 90° to 92°. This data set consists of one map keyed to USGS topographic map Poplar Bluff at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Poplar Bluff at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0017. ARKANSAS. Land use and land cover and associated maps for Russellville, Arkansas. Lat 35° to 35°30′, long 93° to 94°. This data set consists of one map keyed to USGS topographic map Russellville at 1:100,000 (1 inch = about 1.6 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Russellville at 1:100,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0018. Land use and land cover and associated maps for Tulsa, Oklahoma; Arkansas; Missouri; Kansas. Lat 36° to 37°, long 94° to 96°. This data set consists of one map keyed to USGS topographic map Tulsa at 1:250,000 (1 inch = about 4 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Tulsa at 1:250,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 86-0019. Procedure manual for preparation of satellite image maps. 257 p. (F, M, Da, NC, Wb.) (†A limited number of copies of this report are available only from USGS, National Cartographic Information Ctr., 507 National Ctr., Reston, VA 22092.)

OF 87-0310. ARKANSAS. Land use and land cover and associated maps for Fly Gap Mountain, Arkansas. Lat 35°30′ to 36°, long 93° to 94°. This data set consists of one map keyed to USGS topographic map Fly Gap Mountain at 1:100,000 (1 inch = about 1.6 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Fly Gap Mountain at 1:100,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 87-0311. ARKANSAS. Land use and land cover and associated maps for Mountain View, Arkansas. Lat 35°30′ to 36°, long 92° to 93°. This data set consists of one map keyed to USGS topographic map Mountain View at 1:100,000 (1 inch = about 1.6 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Mountain View at 1:100,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

OF 87-0312. ARKANSAS. Land use and land cover and associated maps for Conway, Arkansas. Lat 35° to 35°30′, long 92° to 93°. This data set consists of one map keyed to USGS topographic map Conway at 1:100,000 (1 inch = about 1.6 miles). This map is coded for statistical data development. The map is (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision. Also included is one positive of the cultural base for Conway at 1:100,000. (†USGS, Mid-Continent Mapping Ctr. (NCIC-M), 1400 Independence Rd., Rolla, MO 65401.)

Reports Available Only Through Certain Geological Survey Field Offices

For information on availability and price of these reports, write to the address indicated by a dagger (†) in the listing for the report.

OF 83-0221. NORTH DAKOTA, SOUTH DAKOTA, MONTANA. Hydrology of area 47, Northern Great Plains and Rocky Mountain coal provinces, North Dakota, South Dakota, and Montana, by O. A. Crosby, and R. L. Klausing. 150 p. (NC, Da, Db, Wb, M; USGS, WRD, 821 East Interstate Ave., Bismarck, ND 58501.) †USGS, WRD, 821 East Interstate Ave., Bismarck, ND 58501. (Water-Resources Investigations.)

OF 84-0467. NORTH DAKOTA. Hydrology of area 46, Northern Great Plains and Rocky Mountain coal provinces, North Dakota, by M. G. Croft, and O. A. Crosby. 135 p. (NC, Da, M, Wb.) †USGS, WRD, 821 East Interstate Ave., Bismarck, ND 58501. (Water-resources investigations.)

OF 84-0707. ILLINOIS. Hydrology of area 27, Eastern Region, Interior Coal Province, Illinois, by E. E. Zuehls. 62 p. (NC, Da, M.) †USGS, WRD, Busey Bank County Plaza, 4th Floor, 102 East Main St., Urbana, IL 61801. (Water-Resources Investigations.)

OF 85-0342. ILLINOIS. Hydrology of area 31, Eastern Region, Interior Coal Province, Illinois, by E. E. Zuehls. 61 p. †USGS, WRD, Busey Bank County Plaza, 4th Floor, 102 East Main St., Urbana, IL 61801. Reference copies are available at USGS libraries in Reston, Denver, and Menlo Park. (Water-Resources Investigations.)

OF 86-0482. ARIZONA. Potential for aquifer compaction, land subsidence, and earth fissures in the Tucson Basin, Pima County, Arizona, by S. R. Anderson. 3 over-size sheets. (NC, Da, M, Wb; USGS, WRD, Room 5A, Federal Bldg., 300 West Congress St., Tucson, AZ 85701; 3738 North 16th St., Suite E, Phoenix, AZ; 1940 South 3rd Ave., Yuma, AZ; and 2255 North Gemini Dr., Bldg. 3, Flagstaff, AZ.) †USGS, WRD, Federal Bldg., FB-44, 300 West Congress St., Tucson, AZ 85701.)

OF 87-0243. NEW JERSEY. Selected borehole geophysical logs and drillers' logs, northern coastal plain of New Jersey, by J. E. Murashige, B. A. Birkelo, and A. A. Pucci, Jr. 66 p. (NC, Da, M, Wb; USGS, WRD, 810 Bear Tavern Road, Suite 206, West Trenton, NJ 08628.) †USGS, WRD, 810 Bear Tavern Road, West Trenton, NJ 08628.

OF 87-0394. UTAH. Base of moderately saline water in the Uinta Basin, Utah, and methods used in determining its position, by Lewis Howells, M. S. Longson, and G. L. Hunt. 101 p. (NC, Da, M, Wb.) †USGS, WRD, 1016 Administration Bldg., 1745 West 1700 South, Salt Lake City, UT 84104.

OF 88-0285. HAWAII. Seismicity map of Hawaii, 1962-1985, compiled by S. K. Goter. 1 over-size sheet, scale 1:750,000 (1 inch = about 12 miles). (NC, Da, M, SF, LA.) †USGS, National Earthquake Information Ctr., Seismicity Maps, Box 25046, Mail Stop 967, Denver, CO 80225.)

OF 88-0286. CALIFORNIA. Seismicity map of California, compiled by S. K. Goter. 1 over-size sheet, scale 1:1,000,000 (1 inch = about 16 miles). (NC, Da, M, SF, LA; California Dep. of Conservation, Div. of Mines and Geol., Room 1341, Resources Bldg., 1416 9th St., Sacramento, CA 95814; 367 Civic Dr., Pleasant Hill, CA 94523-1997; and State Office Bldg., 107 South Broadway, Room 1065, Los Angeles, CA 90012.) †USGS, National Earthquake Information Ctr., Seismicity Maps, Box 25046, Mail Stop 967, Denver, CO 80225.)

OF 88-0313. SOUTH DAKOTA. Estimated water use in South Dakota, 1985, by R. D. Benson, and J. E. Winterton. 1 p. (NC, Da, M, Wb; USGS, WRD, Federal Bldg., Room 317, Huron, SD 57350.) †USGS, WRD, Room 317, Federal Bldg., 200 4th St. Southwest, Huron, SD 57350.

MAPS

GEOLOGIC QUADRANGLE MAPS

Multicolor geologic maps on topographic bases in 7 1/2- or 15-minute quadrangle units; scales mainly 1:24,000 or 1:62,500; show bedrock, surficial, or engineering geology. Maps are accompanied by brief texts and some maps by structure and columnar sections also.

GQ-1597. VIRGINIA, WEST VIRGINIA. Geologic map of the Amonate Quadrangle, Buchanan and Tazewell counties, Virginia, and McDowell County, West Virginia, by J. F. Windolph, Jr. 1987. Lat 37°07′30″ to 37°15′, long 81°37′30″ to 81°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 44 inches. (Supersedes Open-file report 83-446.)

GQ-1603. UTAH, ARIZONA. Geologic map of the Kanab Quadrangle, Kane County, Utah, and Mohave and Coconino counties, Arizona, by K. A. Sargent, and B. C. Philpott. 1987. Lat 37° to 37°15′, long 112°30′ to 112°45′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 25 by 29 inches. (Supersedes I-137 and I-138.)

GQ-1606. NEW MEXICO. Geologic map of the Allie Canyon Quadrangle, Grant County, New Mexico, by S. L. Moore. 1987. Lat 32°52′30″ to 33°, long 108° to 108°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 38 inches.

GQ-1608. WYOMING. Geologic map of the Bailey Lake Quadrangle, Lincoln and Teton counties, Wyoming, by M. L. Schroeder. 1987. Lat 43°07′30″ to 43°15′, long 110°37′30″ to 110°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 34 inches. (Supersedes Open-file report 81-715.)

GQ-1609. PENNSYLVANIA. Geologic map of the Topton Quadrangle, Lehigh and Berks counties, Pennsylvania, by A. A. Drake, Jr. 1987. Lat 40°30′ to 40°37′30″, long 75°37′30″ to 75°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 by 58 inches.

GQ-1613. COLORADO. Geologic map of the Barcus Creek SE Quadrangle, Rio Blanco County, Colorado, by W. J. Hail, Jr. 1988. Lat 40° to 40°07′30″, long 108°15′ to 108°22′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 33 by 44 inches.

GQ-1618. COLORADO. Geological map of the Livermore Quadrangle, Larimer County, Colorado, by W. A. Braddock, D. D. Wohlford, and J. J. Connor. 1988. Lat 40°45′ to 40°52′30″, long 105°07′30″ to 105°15′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 32 by 36 inches.

GQ-1620. COLORADO. Geologic map of the Poudre Park Quadrangle, Larimer County, Colorado, by W. A. Braddock, J. T. Abbott, J. J. Connor, and G. A. Swann. 1988. Lat 40°37′30″ to 40°45′, long 105°15′ to 105°22′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 30 by 35 inches.

GQ-1621. COLORADO. Geologic map of the Laporte Quadrangle, Larimer County, Colorado, by W. A. Bnddock, J. J. Connor, G. A. Swann, and D. D. Wohlford. 1988. Lat 40°37′30″ to 40°45′, long 105°07′30″ to 105°15′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 35 inches. (Supesedes Open-file report 73-30.)

GQ-1623. COLORADO. Geologic map of the Cystal Mountain Quadrangle, Larimer County, Colorado, by W. A. Braddock, and L. J. LaFountain. 1988. Lat 40°30′ to 40DG37′30″, long 105°22′30″ to 105°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 30 inches.

GQ-1630. SOUTH CAROLINA. Geologic map of the Ladson Quadrangle, Berkeley, Charleston, and Dorcheser counties, South Carolina, by R. E. Weems, and E. M. Lemon, Jr. 1988. Lat 32°52′30″ to 33°, long 80° to 80°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 54 inches.

GQ-1637. PENNSYLVANIA. Geologic map of the Hamburg Quadrangle, Schuylkill and Berks counties, Pensylvania, by G. G. Lash. 1987. Lat 40°30′ to 40°37′, long 75°5′30″ to 76°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 51 inches.

GQ-1639. CALIFORNIA. Geologic map of the Lake Eleanor Quadrangle, central Sierra Nevada, California by F. C. Dodge, and L. C. Calk. 1987. Lat 37°45′ to 38°, long 119°45′ to 120°. Scale 1:62,500 (1 inch = about 1 mile). Sheet 24 by 35 inches.

GQ-1640. MASSACHUSETTS. Bedrock geologic map of the Westhampton Quadrangle, Hampshire County, Massachusetts, by S. F. Clark, Jr. 1987. Lat 42°15′ to 42°22′30″, long 72°45′ to 72°52′30″. Scale 1:24,000 (1 inch = 2,00 feet). Sheet 34 by 36 inches.

GQ-1641. SOUTH CAROLINA. Geologic map of the Moncks Corner Quadrangle, Berkeley County, South Carolina, by R. E. Weems, and E. M. Lemon, Jr. 1988. Lat 33°07′30″ to 33°15′, long 80° to 80°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 40 by 48 inches.

GQ-1644. COLORADO. Geologic map of the Courthouse Mountain Quadrangle, Gunnison, Hinsdale, and Ouray counties, Colorado, by R. G. Dickinson. 1988. Lat 38°07′30″ to 38°15′, long 107°30′ to 107°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 32 by 34 inches.

GEOPHYSICAL INVESTIGATIONS MAPS

Maps on topographic or planimetric bases; various scales; show results of surveys using geophysical techniques, such as gravity, magnetic, seismic, or radioactivity, which reflect subsurface structures that are of economic or geologic significance. Many maps are correlated with the geology.

GP-0967. OHIO. Filtered magnetic anomaly maps of Ohio, by T. G. Hildenbrand. 1987. Lat about 39° to about 42°, long about 81° to about 85°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 42 by 58 inches.

GP-0970. Free-air gravity anomaly map of the Umnak Plateau region, southeastern Bering Sea, by J. R. Childs, H. W. Magistrale, and A. K. Cooper. 1987. Lat 52° to 58°, long 162° to 174°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 33 by 45 inches.

GP-0971. Free-air gravity anomaly map of the central and northern Bering Sea, by J. R. Childs, H. W. Magistrale, and A. K. Cooper. 1987. Lat 57° to 66°, long 168° to 178°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 41 by 46 inches.

GP-0973. CALIFORNIA, OREGON, WASHINGTON. Residual Bouguer anomaly map of the Cascade Range, California, Oregon, Washington, and British Columbia, by D. L. Williams, Carol Finn, R. W. Couch, Z. F. Danes, G. S. Pitts, W. M. Phillips, and R. P. Riddihough. 1988. Two sheets. Sheet 1, lat 40° to 44°, long 120° to about 124°; sheet 2, lat 44° to about 52°, long 120° to about 124°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 41 by 50 inches; sheet 2, 34 by 41 inches.

GP-0977. Composite magnetic anomaly map of the conterminous United States west of 96° longitude, by K. R. Bond, and Isidore Zietz. 1987. Two sheets. Lat 26° to 49°, long 96° to 119°. Scale 1:2,500,000 (1 inch = about 40 miles. Sheet 1, 41 by 52 inches; sheet 2, 41 by 51 inches. (Accompanied by 13-page text.)

GP-0979. NEW MEXICO. Aerial gamma-ray contour maps of regional surface concentrations of uranium, potassium, and thorium in New Mexico, by J. S. Duval. 1988. Three sheets. Lat about 31° to 37°, long 103° to 109°. Scale 1:750,000 (1 inch = about 12 miles). Each sheet, 34 by 42 inches.

GP-0982. NEVADA. Aerial gamma-ray contour maps of regional surface concentrations of potassium, uranium, and thorium in Nevada, by J. S. Duval. 1988. Three sheets. Lat 35° to 42°, long 114° to 120°. Scale 1:750,000 (1 inch = about 12 miles). Each sheet, 31 by 44 inches.

GP-0983. CALIFORNIA. Aeromagnetic maps of the west-central Sierra Nevada, California, compiled by D. A. Ponce, and V. E. Langenheim. 1987. Four sheets. Sheet 1, lat 37°45′ to 38°, long about 120° to 120°45′; sheet 2, lat 37°30′ to 37°45′, long about 119°45′ to 120°40′; sheet 3, lat 37°15′ to 37°30′, long about 119°30′ to 120°20′; sheet 4, lat about 37° to 37°15′, long about 119°20′ to about 120°10′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 1, 24 by 27 inches; sheet 2, 24 by 57 inches; sheet 3, 24 by 53 inches; sheet 4, 26 by 50 inches.

GP-0985. NEVADA. Bouguer gravity anomaly maps of Paradise, Stagecoach, Dixie, Fairview, and Stingaree valleys, northwestern Nevada, by D. H. Schaefer. 1988. Lat about 39° to about 42°, long about 117° to about 118°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 33 by 42 inches.

GP-0986-D. The magnetic field in the United States, 1985; declination chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 25° to about 70°, long 65° to about 180°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 31 by 46 inches. (Supersedes I-1283.)

GP-0986-F. The magnetic field in the United States, 1985; total intensity chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 25° to about 70°, long 65° to about 180°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 31 by 46 inches. (Supersedes I-1370.)

GP-0986-H. The magnetic field in the United States, 1985; horizontal intensity chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 25° to about 70°, long 65° to about 180°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 31 by 46 inches. (Supersedes I-913.)

GP-0986-I. The magnetic field in the United States, 1985; inclination chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 25° to about 70°, long 65° to about 180°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 31 by 46 inches. (Supersedes I-912.)

GP-0986-Z. The magnetic field in the United States, 1985; vertical intensity chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 25° to about 70°, long 125° to about 180°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 31 by 46 inches. (Supersedes I-914.)

GP-0987-D. The magnetic field of the Earth, 1985; declination chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 60°S to about 70°N, long 90°E to 100°W. Scale 1:40,053,700 (1 inch = about 640 miles) (along equator only). Sheet 34 by 48 inches. (Available flat only.) (Supersedes I-1457.)

GP-0987-F. The magnetic field of the Earth, 1985; total intensity chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 60°S to about 70°N, long 90°E to 100°W. Scale 1:40,053,700 (1 inch = about 640 miles) (along equator only). Sheet 34 by 48 inches. (Available flat only.) (Supersedes I-1461.)

GP-0987-H. The magnetic field of the Earth, 1985; horizontal intensity chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 60°S to about 70°N, long 90°E to 100°W. Scale 1:40,053,700 (1 inch = about 640 miles) (along equator only). Sheet 34 by 48 inches. (Available flat only.) (Supersedes I-1459.)

GP-0987-I. The magnetic field of the Earth, 1985; inclination chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 60°S to about 70°N, long 90°E to 100°W. Scale 1:40,053,700 (1 inch = about 640 miles) (along equator only.) Sheet 34 by 48 inches. (Available flat only.) (Supersedes I-1458.)

GP-0987-Z. The magnetic field of the Earth, 1985; vertical intensity chart, by N. W. Peddie, and A. K. Zunde. 1988. Lat 60°S to about 70°N, long 90°E to 100°W. Scale 1:40,053,700 (1 inch = about 640 miles) (along equator only). Sheet 34 by 48 inches. (Available flat only.) (Supersedes I-1460.)

GP-0989. Map showing global distribution of seismicity, 1977-1986, prepared by National Earthquake Information Center, World Data Center A for Seismology; compiled by S. K. Goter. 1988. Lat 60°S to about 70°N, long about 150°W to about 120°W. Scale 1:40,000,000 (1 inch = 640 miles). Sheet 28 by 42 inches.

GP-0990. Map showing global distribution of first-motion focal mechanisms, 1981-1985, prepared by National Earthquake Information Center, World Data Center A for Seismology; compiled by S. K. Goter. 1988. Lat about 60°S to about 60°N, long about 150°W to about 120°W. Scale 1:40,000,000 (1 inch = 640 miles). Sheet 28 by 42 inches.

GP-0991. Map showing global distribution of moment-tensor focal mechanisms, 1981-1985, prepared by National Earthquake Information Center, World Data Center A for Seismology; compiled by S. K. Goter. 1988. Lat about 60°S to about 60°N, long about 150°W to about 120°W. Scale 1:40,000,000 (1 inch = 640 miles). Sheet 28 by 42 inches.

MISCELLANEOUS INVESTIGATIONS SERIES MAPS

Maps on planimetric or topographic bases; regular and irregular areas; various scales; a wide variety of format and subject matter. The series also includes 7 1/2-minute quadrangle photogeologic maps on planimetric bases which show geology as interpreted from aerial photographs. Series also includes maps of Mars and the Moon.

I-0432. WASHINGTON. Geologic map and section of Mount Rainier National Park, Washington, by R. S. Fiske, C. A. Hopson, and A. C. Waters. 1964. Lat about 46°45′ to 47°, long about 121°30′ to 121°55′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 28 by 28 inches. (Accompanied by a sheet of text.) (Reprinted 1976, 1988.)

I-0711. WYOMING. Geologic map of Yellowstone National Park. 1972. Lat 44°08′ to 45°07′, long 109°48′ to 111°10′. Scale 1:125,000 (1 inch = about 2 miles). Sheet 39 by 49 inches. (Reprint.)

I-0999. COLORADO. Geologic map of the Leadville 1° by 2° Quadrangle, northwestern Colorado, by Ogden Tweto, R. H. Moench, and J. C. Reed, Jr. 1978. Lat 39° to 40°, long 106° to 108°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 31 by 42 inches. (Reprint.)

I-1091-G. HAWAII. Map showing distribution, composition, and age of late Cenozoic volcanic centers in Hawaii, by R. G. Luedke, and R. L. Smith. 1988. Lat about 19° to about 22°, long about 155° to about 160°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 39 by 54 inches.

I-1146. CALIFORNIA. Geologic map of east-central Santa Monica Mountains, Los Angeles County, California, by R. F. Yerkes, and R. H. Campbell. 1980. Lat 34°01′30″ to 34°07′30″, long 118°33′50″ to 118°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 47 inches. (Reprint.)

I-1182-G. Beaufort Sea coastal erosion, sediment flux, shoreline evolution, and the erosional shelf profile, by Erk Reimnitz, S. M. Graves, and P. W. Barnes. 1988. Lat about 70° to about 71°, long about 148° to 154°. Scale 1:82,000 (1 inch = about 7,000 feet). Sheet 40 by 53 inches. (Accompanied by 22-page text.)

I-1198-E. WASHINGTON. Map showing coastal erosion, sediment supply, and longshore transport in the Port Townsend 30- by 60-minute Quadrangle, Puget Sound region, Washington, by R. F. Keuler. 1988. Lat 48° to 48°30', long 122° to 123°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 38 by 54 inches.

I-1198-G. WASHINGTON. Bedrock geologic map of the Port Townsend 30- by 60-minute Quadrangle, Puget Sound region, Washington, by J. T. Whetten, P. I. Carroll, H. D. Gower, E. H. Brown, and Fred Pessl, Jr. 1988. Lat 48° to 48°30', long 122° to 123°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 38 by 54 inches.

I-1251-E. NORTH CAROLINA, SOUTH CAROLINA. Geologic map of the Charlotte 1° by 2° Quadrangle, North Carolina and South Carolina, by Richard Goldsmith, D. J. Milton, and J. W. Horton, Jr. 1988. Lat 35° to 36°, long 80° to 82°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 42 by 58 inches. (Accompanied by 7-page text.) (Supersedes Open-file report 78-590.)

I-1310-E. NEW MEXICO, ARIZONA. Geochemical interpretative and summary maps, Silver City 1° by 2° Quadrangle, New Mexico and Arizona, by K. C. Watts, and J. R. Hassemer. 1988. Two sheets. Lat 32° to 33°, long 108° to 110°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 43 by 49 inches; sheet 2, 28 by 42 inches.

I-1360-F. MICHIGAN, WISCONSIN. Aeromagnetic map of the Iron River 1° by 2° Quadrangle, Michigan and Wisconsin, by E. R. King. 1987. Lat 46° to 47°, long 88° to 90°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 32 by 44 inches.

I-1508-C. MONTANA. Map showing distribution of moraines and extent of glaciers from the mid-19th century to 1979 in the Mount Jackson area, Glacier National Park, Montana, by P. E. Carrara, and R. G. McGimsey. 1988. Lat 48°34' to 48°39', long 113°35'30" to 113°47'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 42 inches.

I-1632. IDAHO. Geologic map of the Craters of the Moon, Kings Bowl, and Wapi lava fields, and the Great Rift volcanic rift zone, south-central Idaho, by M. A. Kuntz, D. E. Champion, R. H. Lefebvre, and H. R. Covington. 1988. Lat about 42°45' to 43°37'30", long 113°03'45" to 114°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 42 by 55 inches.

I-1642. MONTANA. Geologic map of the Rogers Pass area, Lewis and Clark County, Montana, by J. W. Whipple, M. R. Mudge, and R. L. Earhart. 1987. Lat 46°52'30" to 47°15', long 112°07'30" to 112°47'30". Scale 1:48,000 (1 inch = 4,000 feet). Sheet 41 by 57 inches.

I-1645. NEW YORK. Geologic map of the Birch Creek area, St. Lawrence County, New York, by C. E. Brown. 1988. Lat about 44°25' to 44°30', long 75°30' to about 75°35'. Scale 1:12,000 (1 inch = 1,000 feet). Sheet 41 by 58 inches.

I-1655. Basement and basement-cover relation map of the Appalachian Orogen in the United States, by A. A. Drake, Jr., L. M. Hall, and A. E. Nelson. 1988. Two sheets. Sheet 1, lat 39° to 47°, long 66° to 78°; sheet 2, lat 32° to 39°, long 77° to 86°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 1, 32 by 48 inches; sheet 2, 30 by 48 inches.

I-1692. MAINE. Geologic map of western interior Maine, by R. H. Moench and K. A. Pankiwskyj, *with contributions by* G. M. Boone, E. L. Boudette, Allan Ludman, W. R. Newell, and T. I. Vehrs. 1988. Lat 44°15' to 45°15', long 69°30' to about 71°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 31 by 39 inches. (Accompanied by 21-page text.)

I-1714. WISCONSIN. Geologic map of the Dunbar and Dunbar NE quadrangles, Marinette and Florence counties, Wisconsin, by P. K. Sims, and K. J. Schulz. 1988. Lat 45°37'30" to 45°45', long 88° to 88°15'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 44 inches.

I-1729. MONTANA. Geologic map of the Judith Mountains, Fergus County, Montana, by E. N. Goddard. 1988. Lat about 47°05' to about 47°15', long about 108°57'30" to about 109°22'30". Scale 1:31,680 (1 inch = about 2,640 feet). Sheet 39 by 51 inches.

I-1765. UTAH, COLORADO. Geologic map of the Westwater 30' by 60' Quadrangle, Grand and Uintah counties, Utah and Garfield and Mesa counties, Colorado, by J. L. Gualtieri. 1988. Lat 39° to 39°30', long 109° to 110°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 32 by 49 inches.

I-1768. NEW MEXICO. Geologic map of the Cliff Quadrangle, Grant County, New Mexico, by T. L. Finnell. 1987. Lat 32°45' to 33°, long 108°30' to 108°45'. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 31 by 42 inches.

I-1774. UTAH. Geologic map and sections of the area between Hamlin Valley and Escalante Desert, Iron County, Utah, by M. G. Best. 1987. Lat 37°45' to 38°, long 113°45' to 114°. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 30 by 39 inches. (Supersedes Open-file report 84-154.)

I-1775. NEW MEXICO. Geologic and aeromagnetic map of a part of the Mescalero Apache Indian Reservation, Otero County, New Mexico, by S. L. Moore, E. E. Foord, and G. A. Meyer. 1988. Lat 33°00'09" to 33°18'22", long 105°18'57" to 105°49'49". Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 41 by 56 inches.

I-1778. ARIZONA. Map showing structural control of breccia pipes on the southern Marble Plateau, north-central Arizona, by H. B. Sutphin, and K. J. Wenrich. 1988. Two sheets. Sheet 1, lat 35°55' to 36°15', long 111°18'30" to 111°50'; sheet 2, lat 35°37'30" to 35°55', long 111°18'30" to 111°50'. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 1, 36 by 50 inches; sheet 2, 32 by 41 inches. (Supersedes Open-file report 83-908.)

I-1793. ARIZONA. Geologic map of the southwestern Moenkopi Plateau and southern Ward Terrace, Coconino County, Arizona, by G. H. Billingsley. 1987. Lat 35°37'30" to 35°52'30", long 111° to 111°22'30". Scale 1:31,680 (1 inch = one-half mile). Sheet 41 by 45 inches.

I-1794. UTAH. Geologic map of the southern Pine Valley area, Beaver and Iron counties, Utah, by M. G. Best, H. T. Morris, R. W. Kopf, and J. D. Keith. 1987. Lat 38° to 38°15', long 113°30' to 113°45'. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 33 by 42 inches.

I-1795. UTAH. Geologic map of the Indian Peak (southern Needle) Range, Beaver and Iron counties, Utah, by M. G. Best, S. K. Grant, L. F. Hintze, J. G. Cleary, A. Hutsinpiller, and D. M. Saunders. 1987. Lat 38° to 38°15', long 113°45' to 114°. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 31 by 42 inches.

I-1796. UTAH. Geologic map of the southern Mountain Home and northern Indian Peak ranges (central Needle Range), Beaver County, Utah, by M. G. Best, L. F. Hintze, and R. D. Holmes. 1987. Lat 38°15′ to 38°30′, long 113°45′ to 114°. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 34 by 44 inches.

I-1797-A. UTAH. Chart showing lithology, mineralogy, and paleontology of the nonmarine North Horn Formation and Flagstaff Member of the Green River Formation, Price Canyon, central Utah; a principal reference section, by T. D. Fouch, J. H. Hanley, R. M. Forester, C. W. Keighin, J. K. Pitman, and D. J. Nichols. 1987. Sheet 39 by 56 inches. (Accompanied by 8-page text.)

I-1798. UTAH. Geologic map of the Adams Head—Johns Valley area, southern Sevier Plateau, Garfield County, Utah, by P. D. Rowley, Richard Hereford, and V. S. Williams. 1987. Lat 37°45′ to 38°, long 112° to 112°15′. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 31 by 37 inches.

I-1799. Atlas of oblique maps; a collection of landform portrayals of selected areas of the world, edited by T. R. Alpha, J. S. Detterman, and J. M. Morley. 1988. 137 p. 16 by 20 inches.

I-1802-B. Geologic map of the eastern equatorial region of Mars, by Ronald Greeley, and J. E. Guest. 1987. Lat −57° to 57°, long 180° to 360°. Scale 1:15,000,000 (1 inch = 240 miles). Sheet 41 by 52 inches.

I-1802-C. Geologic map of the polar regions of Mars, by K. L. Tanaka, and D. H. Scott. 1987. Scale 1:9,203,425 (1 inch = about 160 miles). Sheet 41 by 52 inches.

I-1804. CALIFORNIA. Geologic map of Lava Beds National Monument, Northern California, by J. M. Donnelly-Nolan, and D. E. Champion. 1987. Lat about 41°40′ to about 41°50′ , long about 121°25′ to about 121°35′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 56 inches. Sheet 38 by 56 inches.

I-1807. ALASKA. Geologic map of the Ketchikan and Prince Rupert quadrangles, southeastern Alaska, by H. C. Berg, R. L. Elliott, and R. D. Koch. 1988. Lat 54°40′ to 56°, long 130° to 132°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 33 by 35 inches. (Accompanied by 27-page text.) (Supersedes Open-file report 78-73-A.)

I-1820. WYOMING. Geologic map of the Eagle Point Quadrangle and parts of the Bargee and Lookout Butte quadrangles, Fremont County, Wyoming, by R. C. Warlow, J. F. Windolph, Jr., and N. L. Hickling. 1988. Lat about 43°20′30″ to about 43°34′30″, long 108°45′ to 108°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 38 by 53 inches.

I-1826. NEVADA. Surficial geologic map of the Bare Mountain Quadrangle, Nye County, Nevada, by W C Swadley, and L. D. Parrish. 1988. Lat 36°45′ to 37°, long 116°30′ to 116°45′. Scale 1:48,000 (1 inch = 4,000 feet). Sheet 29 by 33 inches.

I-1827. ARIZONA. Geologic map and cross sections of the Pedregosa Mountains, Cochise County, Arizona, by Harald Drewes, and W. E. Brooks. 1988. Lat 31°30′ to 31°45′, long 109°15′ to 109°30′. Scale 1:48,000 (1 inch = 4,000 feet). Sheet 41 by 49 inches.

I-1851. Geologic map of the Maasaw Patera area of Io, by H. J. Moore. 1987. Lat −48° to −35°, long 335° to 350°. Scale 1:1,003,000. Sheet 30 by 42 inches.

I-1861. PUERTO RICO. Bottom sediment types of the northern insular shelf of Puerto Rico; Punta Peñón to Punta Salinas, by O. H. Pilkey, D. M. Bush, Duke University; and R. W. Rodríguez, U.S. Geological Survey. 1987. Lat 18°27′30″ to 18°33′ , long 66°11′ to 66°52′30″. Scale 1:40,000 (1 inch = about 3,500 feet.) Sheet 37 by 55 inches.

I-1875. MISSOURI. Subsurface geology of Paleozoic, Mesozoic, and Cenozoic units in Southeast Missouri, by T. O. Mesko. 1988. Two sheets. Lat 36° to 37°30′, long 89° to 90°30′. Each sheet, scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 40 by 54 inches; sheet 2, 20 by 37 inches.

I-1878. NEBRASKA, KANSAS, COLORADO. Bedrock geologic map showing the configuration of the bedrock surface, McCook 1° by 2° Quadrangle, Nebraska and Kansas, and part of the Sterling 1° by 2° Quadrangle, Nebraska and Colorado, by D. A. Eversoll, V. H. Dreeszen, R. R. Burchett, Nebraska Geological Survey; and G. E. Prichard, U.S. Geological Survey. 1988. Lat 40° to 41°, long 100° to 102°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 25 by 38 inches.

I-1879. NEBRASKA. Bedrock geologic map showing configuration of the bedrock surface in the Nebraska part of the Sioux City 1° by 2° Quadrangle, by R. R. Burchett, V. H. Dreeszen, V. L. Souders, and G. E. Prichard. 1988. Lat 42° to 43°, long 96° to 98°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 24 by 37 inches.

I-1892-A. ARIZONA. Investigations of land subsidence and earth fissures near the Salt-Gila Aqueduct, Maricopa and Pinal counties, Arizona; altitudes of the tops of the consolidated rocks, surficial geology, and land subsidence in the Florence Quadrangle, by R. L. Laney, and L. W. Pankratz. 1987. Lat 33° to 33°07′30″, long 111°22′30″ to 111°30′. Scale 1:36,000 (1 inch = 3,000 feet). Sheet 24 by 41 inches.

I-1895. NEW MEXICO. Geologic map of the northwestern part of the Mescalero Apache Indian Reservation, Otero County, New Mexico, by S. L. Moore, E. F. Foord, G. A. Meyer, and G. W. Smith. 1988. Lat 33°13′04″ to 33°23′25″, long 105°43′ 30″ to 105°55′46″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 41 by 49 inches.

I-1897-A. ARIZONA. Hydraulic map of House Rock Rapids, Grand Canyon, Arizona, by S. W. Kieffer. 1988. Lat about 36°39′, long about 111°45′. Scale 1:1,000 (1 inch = about 100 feet). Sheet 34 by 42 inches.

I-1900. NEVADA. Gravity, depth to consolidated rock, and soil temperature in the Elko area, northeastern Nevada, by D. H. Schaefer. 1988. Lat about 40°45′ to about 40°56′, long about 115°44′ to about 115°54′. Scales 1:100,000 (1 inch = 1.6 miles), 1:24,000 (1 inch = 2,000 feet), and 1:50,000 (1 inch = about 4,200 feet). Sheet 32 by 37 inches.

I-1911. Controlled photomosaic of part of the Nilosyrtis Mensae region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 24 by 39 inches.

I-1912. Controlled photomosaic of part of the Nilosyrtis Mensae region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 23 by 39 inches.

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I-1913. Controlled photomosaic of part of the Nilosyrtis Mensae region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 24 by 39 inches.

I-1914. Controlled photomosaic of part of the Nilosyrtis Mensae region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 22 by 39 inches.

I-1915. Controlled photomosaic of part of the Nilosyrtis Mensae region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 22 by 39 inches.

I-1916. Controlled photomosaic of part of the Nilosyrtis Mensae region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 22 by 39 inches.

I-1917. Controlled photomosaic of the Planum Australe region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 26 by 37 inches.

I-1918. Controlled photomosaic of part of the Maja Valles region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 26 by 38 inches.

I-1919. Controlled photomosaic of part of the Maja Valles region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 25 by 38 inches.

I-1920. The southern hemispheres of the Uranian satellites. 1988. Three sheets. Sheet 1, scale 1:2,000,000 (1 inch = about 32 miles); sheet 2, scale 1:5,000,000 (1 inch = about 80 miles); sheet 3, scale 1:10,000,000 (1 inch = about 160 miles). Sheet 1, 24 by 41 inches; sheet 2, 23 by 40 inches; sheet 3, 28 by 43 inches.

I-1921. Digital image map and equal-area photomosaics of Rhea. 1988. Two sheets. Sheet 1, scale 1:5,000,000 (1 mm = 5 km); sheet 2, scale 1:6,630,000,000 (1 mm = 6630 km). Sheet 1, 39 by 41 inches; sheet 2, 33 by 40 inches.

I-1945. ALASKA. Geometry of the Benioff zone and mode of subduction beneath southwestern Alaska and the Aleutian Islands, by A. F. Espinosa, and K. S. Rukstales. 1988. Lat 50° to 70°, long 130° to 170°. Sheet 18 by 46 inches.

I-1952. Geologic framework, petroleum potential, and field locations of the sedimentary basins in China, by K. Y. Lee, and C. D. Masters. 1988. Two sheets. Sheet 1, lat 15° to 55°, long 135° to 75°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 1, 39 by 47 inches; sheet 2, 36 by 56 inches.

I-1953. Controlled photomosaic of part of the Lunae Planum region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 27 by 38 inches.

I-1954. Controlled photomosaic of part of the Lunae Planum region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 27 by 38 inches.

I-1955. Controlled photomosaic of part of the Lunae Planum region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 27 by 38 inches.

I-1956. Controlled photomosaic of part of the Lunae Planum region of Mars. 1988. Scale 1:500,000 (1 inch = about 8 miles). Sheet 27 by 38 inches.

I-1987-A. Map showing bottom topography of the Mid-Atlantic continental margin, Cape Cod to Albemarle Sound, by E. C. Escowitz, G. W. Hill, and R. W. Bowen. 1988. Lat 36° to 42°, long 69° to 78°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 33 by 40 inches. (This high-quality completely digital map produced by the use of computer technology is the first of six which provides coverage of the Atlantic and Gulf of Mexico continental margin.)

MISCELLANEOUS INVESTIGATIONS SERIES MAPS—QUATERNARY GEOLOGICAL ATLAS OF THE UNITED STATES

I-1420 (NH-16). Quaternary geologic map of the Mobile 4° by 6° Quadrangle, United States. State compilations by C. W. Copeland, Jr., K. F. Rheams, T. L. Neathery, W. A. Gilliland, Walter Schmidt, W. C. Clark, Jr., and D. E. Pope. Edited and integrated by G. M. Richmond, D. S. Fullerton, and D. L. Weide. 1988. Lat 28° to 32°, long 84° to 90°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 30 by 48 inches.

COAL MAPS

Coal map of North America, by G. H. Wood, Jr., and W. V. Bour, III. 1988. Two sheets. North half, sheet 1, lat about 35° to 90°, long 10°W to 170°E; south half, sheet 2, lat about 10° to about 55°, long about 50° to 150°. Scale 1:5,000,000 (1 inch = about 80 miles). Each sheet, 42 by 71 inches. (Accompanied by 44-page text.) (This map has a transverse Mercator projection; the north half features Canada and the south half features the United States.) (Supersedes Coalfields of the United States and Coalfields of Alaska.)

COAL INVESTIGATIONS MAPS

Geologic maps on topographic or planimetric bases; various scales; show bedrock geology, stratigraphy, and structural relations in certain coal-resource areas.

C-0097-B. COLORADO. Cross sections showing correlation of coal beds and coal zones in the Mesaverde Formation in the Carbondale 30′ by 60′ Quadrangle, west-central Colorado, by M. S. Ellis, V. L. Freeman, and J. R. Donnell. 1988. Two sheets, Lat 39° to 39°30′, long 107° to 108°. Scale 1:100,000 (1 inch = about 1.6 miles). Sheet 1, 40 by 59 inches; sheet 2, 40 by 57 inches.

C-0108. COLORADO. Geological map and coal sections of the Round Bottom Quadrangle, Moffat County, Colorado, by E. A. Johnson. 1987. Lat 40°22′30″ to 40°30′, long 107°37′30″ to 107°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 36 by 55 inches.

C-0110. WYOMING. Location of coal and carbonaceous shale beds exposed in the eastern part of the Kemmerer 15-minute Quadrangle, Lincoln County, Wyoming, by J. N. Weaver, and J. W. M'Gonigle. 1987. Lat 41°45′ to 42°, long 110°30′ to 110°39′26″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 34 by 52 inches.

C-0113. MONTANA. Diagrams showing proposed correlation and nomenclature of Eocene and Paleocene coal beds in the Birney 30′ by 60′ Quadrangle, Big Horn, Rosebud, and Powder River counties, Montana, by W. C. Culbertson. 1987. Two sheets. Lat 45° to 45°30′, long 106° to 107°. Sheet 1, 38 by 55 inches; sheet 2, 33 by 37 inches. (Supersedes Open-file report 80-666.)

C-0114. WYOMING, MONTANA. Map showing principal coal beds and bedrock geology of the Buffalo Creek-Clear Creek area, central Powder River basin, Wyoming and Montana, by C. L. Molnia, and S. A. Orrell. 1988. Lat 44°45′ to 45°, long 106° to 106°30′. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 28 by 45 inches.

C-0117. COLORADO. Geologic map and coal sections of the Lay Se Quadrangle, Moffat County, Colorado, by M. E. Brownfield, and Kevin Anderson. 1988. Two sheets. Lat 40°30' to 40°37'30", long 107°45' to 107°52'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 1, 30 by 34 inches; sheet 2, 23 by 43 inches. (Supersedes Open-file report 79-1680.)

C-0123. COLORADO. Regional correlation of the middle coal group of the Upper Cretaceous Mesaverde Group, Yampa coal field, Moffat and Routt counties, Colorado, by E. A. Johnson, and M. E. Brownfield. 1988. Sheet 26 by 31 inches.

C-0126-A. MONTANA. Maps showing outcrop, structure contours, cross sections, and isopachs of partings; Mammoth coal bed, Paleocene Tongue River Member of the Fort Union Formation, Bull Mountain coal field, south-central Montana, by C. W. Connor. 1988. Two sheets. Lat about 46°15' to about 46°22'30", long 108°07'30" to about 108°30'. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 1, 40 by 59 inches; sheet 2, 43 by 57 inches. (Supersedes Open-file reports 80-711 and 81-190.)

OIL AND GAS INVESTIGATIONS CHARTS

Charts show stratigraphic information for certain oil and gas fields and other areas having hydrocarbon potential.

OC-0130. NEW MEXICO. Subsurface correlation of Jurassic and Cretaceous rocks having occurrences of uranium, coal, and oil; Mariano Lake-Lake Valley Drilling Project, northwestern New Mexico, by A. R. Kirk, A. C. Huffman, Jr., and R. S. Zech. 1988. Sheet 41 by 44 inches.

OIL AND GAS INVESTIGATIONS MAPS

OM-0219. Map showing wells drilled for oil and gas deeper than 15,000 feet in the conterminous United States and offshore, compiled by K. I. Takahashi and K. I. Cunningham; edited by K. L. Varnes. 1987. Lat 25° to 50°, long 65° to 125°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 29 by 42 inches.

OM-0220. Map showing wells drilled for oil and gas deeper than 20,000 feet in the conterminous United States and offshore, compiled by K. I. Takahashi and K. I. Cunningham; edited by K. L. Varnes. 1987. Lat 25° to 50°, long 65° to 125°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 29 by 42 inches. (Supersedes Open-file report 83-922.)

OM-0223. Map of sedimentary basins in the conterminous United States, compiled by S. E. Frezon and T. M. Finn; edited by K. L. Varnes. 1988. Lat about 22° to about 49°, long about 66° to about 126°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 30 by 41 inches. (Supersedes Open-file report 83-919.)

MISCELLANEOUS FIELD STUDIES MAPS

Multicolor or black and white maps on topographic or planimetric bases; quadrangle or irregular areas; various scales. Pre-1971 maps show bedrock geology in relation to specific mining or mineral-deposit problems; post-1971 maps are preliminary black and white maps on various subjects such as environmental studies or Wilderness mineral investigations.

MF-0709. CALIFORNIA. Maps showing maximum earthquake intensity predicted in the southern San Francisco Bay region, California, for large earthquakes on the San Andreas and Hayward faults, by R. D. Borcherdt, J. F. Gibbs, and K. R. Lajoie. 1975. Three sheets. Sheet 1, lat about 37°15' to 37°52'30", long about 121°47' to about 122°37'; sheet 2, lat about 37°06' to 37°52'30", long about 121°33' to 122°37'30"; sheet 3, lat 37°06' to 37°52'30", long about 121°33' to 122°37'30". Scale 1:125,000 (1 inch = about 2 miles). Sheet 1, 26 by 33 inches; sheet 2, 39 by 40 inches; sheet 3, 37 by 39 inches. (Accompanied by 11-page text.) (Reprint.)

MF-0793. ARIZONA. Reconnaissance geologic map of the Vaca Hills Quadrangle, Arizona, by N. G. Banks, and R. D. Dockter. 1976. Lat 32°15' to 32°30', long 111°30' to 111°45'. Scale 1:62,500 (1 inch = about 1 mile). Sheet 24 by 40 inches. (Reprint.)

MF-0861. Map and list of reported occurrences of platinum-group metals in the conterminous United States, by W. N. Blair, N. J Page, and M. G. Johnson. 1977. Two sheets. Lat 21° to 49°, long 65° to 125°. Scale 1:5,000,000 (1 inch = about 80 miles). Sheet 1, 33 by 40 inches; sheet 2, 29 by 30 inches. (Reprint.)

MF-0881. CALIFORNIA. Map showing faults with Quaternary displacement, northeastern San Francisco Bay region, California, by E. J. Helley, and D. G. Herd. 1977. Lat 37°52' 30" to 38°52'30", long 121°30' to 122°37'30". Scale 1:125,000 (1 inch = about 2 miles). Sheet 43 by 52 inches. (Reprint.)

MF-0910. CALIFORNIA. Preliminary map showing recency of faulting in coastal south-central California, by J. M. Buchanan-Banks, E. H. Pampeyan, H. C. Wagner, and D. S. McCulloch. 1978. Three sheets. Sheet 1, lat 36° to about 37°15', long 120°45' to 122°30'; sheet 2, lat about 34°15' to 36°, long 119°45' to 122°; sheet 3, lat about 34°15' to about 37°15', long about 120° to about 122°. Scales 1:250,000 (1 inch = about 4 miles) and 1:500,000 (1 inch = about 8 miles). Sheet 1, 26 by 42 inches; sheet 2, 36 by 37 inches; sheet 3, 23 by 35 inches. (Accompanied by 11-page text.) (Reprint.)

MF-1011. Preliminary seismotectonic map of the central Mississippi Valley and environs, by A. V. Heyl, and F. A. McKeown. 1978. Two sheets. Lat 35° to 39°, long about 87° to about 92°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 42 by 48 inches; sheet 2, 34 by 37 inches. (Reprint.)

MF-1244-C. NEVADA. Aeromagnetic map of the Mt. Moriah Roadless Area, White Pine County, Nevada, by R. A. Martin. 1987. Scale 1:62,500 (1 inch = about 1 mile). Sheet 21 by 26 inches.

MF-1341-B. KENTUCKY. Geochemical survey of the Troublesome Roadless Area, McCreary County, Kentucky, by A. E. Grosz, and D. F. Siems. 1987. Lat 36°35' to 36°37'30", long about 84°40' to 84°45'. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 30 by 42 inches.

MF-1347-B. GEORGIA. Geochemical survey of the Tray Mountains Roadless Area, northern Georgia, by R. P. Koeppen, and A. E. Nelson. 1988. Lat about 34°45' to about 35°, long about 83°32'30" to 83°45'. Scale 1:30,000 (1 inch = 2,500 feet). Sheet 42 by 52 inches.

MF-1354-E. MONTANA, IDAHO. Aeromagnetic and gravity anomaly maps and a hydrothermal veins favorability map of the Wallace 1° by 2° Quadrangle, Montana and Idaho, by M. D. Kleinkopf, J. E. Harrison, and Viki Bankey. 1988. Two sheets. Lat 47° to 48°, long 114° to 116°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 40 by 52 inches; sheet 2, 36 by 44 inches.

MF-1539-D. ALASKA. Maps showing aeromagnetic survey and geologic interpretation of the Ugashik and part of Karluk quadrangles, Alaska, by J. E. Case, R. L. Detterman, F. H. Wilson, B. A. Chuchel, and M. E. Yount. 1988. Two sheets. Lat 57° to 58°, long 155° to 158°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 24 by 30 inches; sheet 2, 24 by 38 inches. (Accompanied by 12-page text.)

MF-1539-F. ALASKA. Geochemical map showing the distribution of selected elements determined in stream sediments from the Ugashik, Bristol Bay, and western Karluk quadrangles, Alaska, by S. E. Church, J. G. Frisken, D. E. Detra, and W. R. Willson. 1988. Lat 57° to 58°, long 155° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 39 by 41 inches.

MF-1539-G. ALASKA. Geochemical map showing the distribution of selected elements determined in nonmagnetic heavy-mineral concentrates from the Ugashik, Bristol Bay, and western Karluk quadrangles, Alaska, by J. G. Frisken, S. E. Church, D. E. Detra, and W. R. Willson. 1988. Two sheets. Lat 57° to 58°, long 155° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 39 by 40 inches; sheet 2, 35 by 39 inches.

MF-1539-H. ALASKA. Mineralogical map showing the distribution of selected ore-related minerals identified in nonmagnetic heavy-mineral concentrates from the Ugashik, Bristol Bay, and western Karluk quadrangles, Alaska, by J. G. Frisken, S. E. Church, and W. R. Willson. 1988. Lat 57° to 58°, long 155° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 39 by 54 inches.

MF-1564-B. CALIFORNIA. Summary geochemical maps for samples of rocks, minus-80-mesh stream sediment, and nonmagnetic heavy-mineral concentrate, Kings River, Rancheria, Agnew, and Oat Mountain Roadless Areas, Fresno County, California, by M. A. Chaffee, and W. J. Nokleberg. 1988. Two sheets. Lat 36°45′ to 37°, long 118°45′ to 119°15′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 1, 37 by 51 inches; sheet 2, 25 by 31 inches.

MF-1593-A. VERMONT. Geologic and geochemical survey of the Bristol Cliffs Wilderness, Addison County, Vermont, by J. F. Slack, P. J. Atelsek, and A. E. Grosz. 1988. Lat about 44°04′ 30″ to about 44°07′30″, long about 73°02′ to 73°05′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 41 by 41 inches.

MF-1594-E. NEW HAMPSHIRE. Mines, prospects, and mineral sites, wilderness and RARE II areas, White Mountain National Forest, New Hampshire, by G. C. Gazdik, L. E. Harris, R. A. Welsh, Jr., and V. P. Girol, U.S. Bureau of Mines. 1988. Two sheets. Lat 43°45′ to 44°45′, long 70°45′ to 72°. Scale 1:125,000 (1 inch = about 2 miles). Sheet 1, 39 by 52 inches; sheet 2, 22 by 27 inches.

MF-1603-B. CALIFORNIA. Geochemical maps of the Coxcomb Mountains Wilderness Study Area (CDCA-328), Riverside and San Bernardino counties, California, by J. E. Kilburn, D. E. Detra, and Barbara Chazin. 1988. Two sheets. Lat about 33°50′ to about 34°05′, long 115°15′ to 115°45′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 1, 42 by 54 inches; sheet 2, 39 by 54 inches.

MF-1605-C. MONTANA. Geochemical maps of the Madison Roadless Area, Madison and Gallatin counties, Montana, by F. S. Simmons, and R. E. Van Loenen. 1988. Three sheets. Lat about 44°45′ to about 45°30′, long about 111° to about 111°45′ . Sheet 1, scale 1:62,500 (1 inch = about 1 mile); sheet 2, scale 1:225,000 (1 inch = 3.75 miles); sheet 3, scale 1:225,000 (1 inch = 3.75 miles). Sheet 1, 40 by 55 inches; sheet 2, 40 by 58 inches; sheet 3, 25 by 39 inches.

MF-1620-B. MONTANA. Geologic map of the Welcome Creek Wilderness and vicinity, Granite, Missoula, and Ravalli counties, Montana, by D. J. Lidke, C. A. Wallace, S. E. Zarske, N. S. MacLeod, Jr., U.S. Geological Survey; and L. D. Broeker, U.S. Forest Service. 1988. Lat 46°30′ to 46°45′, long 113°30′ to 114°. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 38 by 43 inches.

MF-1656. SOUTH CAROLINA, GEORGIA. Interpretations from multichannel seismic-reflection profiles of the deep crust crossing South Carolina and Georgia from the Appalachian Mountains to the Atlantic Coast, by J. C. Behrendt. 1985. Three sheets. Sheet 1, 38 by 46 inches; sheet 2, 34 by 55 inches; sheet 3, 33 by 56 inches. (Reprint.)

MF-1818. CALIFORNIA. Interpretive aeromagnetic map of the Eagle Mountains Wilderness Study Area, Riverside County, California, by V. J. S. Grauch. 1988. Lat 33°40′ to 33°55′ , long 115°25′ to 115°45′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 31 by 40 inches.

MF-1834-D. ARIZONA. Maps showing anomalous concentrations of lead, molybdenum, bismuth, and tungsten in stream sediment and heavy-mineral concentrate from parts of the Ajo and Lukeville 1° by 2° quadrangles, Arizona, by P. K. Theobald, and H. N. Barton. 1988. Lat about 32° to 33°, long 112° to 114°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 37 by 47 inches.

MF-1834-E. ARIZONA. Maps showing anomalous concentrations of zinc, silver, antimony, manganese, barium, and strontium in stream sediment and heavy-mineral concentrate from parts of the Ajo and Lukeville 1° by 2° quadrangles, Arizona, by P. K. Theobald, and H. N. Barton. 1988. Lat about 32° to 33°, long 112° to 114°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 40 by 46 inches.

MF-1835-B. Equivalent freshwater head and dissolved-solids concentration of water in rocks in Cambrian, Ordovician, and Mississippian age in the northern Midcontinent, U.S.A., by D. G. Jorgensen, J. O. Helgesen, R. B. Leonard, and D. C. Signor. 1986. Two sheets. Lat 37° to 46°, long 88° to 100°. Scale 1:1,000,000 (1 inch = about 16 miles). Each sheet, 43 by 56 inches. (Reprint.)

MF-1835-C. Radiometric ages of basement rocks in the northern Midcontinent, U.S.A., compiled by R. F. Marvin. 1988. Two sheets. Lat 36° to 46°, long 88° to 100°. Scale 1:1,000,000 (1 inch = about 16 miles). Each sheet 42 by 51 inches. (Accompanied by 36-page text.)

MF-1835-E. Phanerozoic structural features in the northern Midcontinent, U.S.A., compiled by R. R. Anderson, Iowa Department of Natural Resources, Geological Survey Bureau. 1988. Lat 88° to 100°, long 36° to 46°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 40 by 46 inches.

MF-1838-B. ALASKA. Non-placer mineral occurrences in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, western Alaska, by B. M. Gamble. 1988. Lat 64° to about 66°, long 162° to 165°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 26 by 44 inches. (Accompanied by 13-page text.)

MF-1838-C. ALASKA. Placer gold of the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, western Alaska, by W. E. Yeend, D. S. Kaufman, and A. B. Till. 1988. Lat about 64°17' to about 66°, long 162° to 165°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 39 by 39 inches.

MF-1853-B. ARIZONA. Metallogenic map of volcanogenic massive-sulfide occurrences in Arizona, by M. E. Donnelly, Noranda Exploration, Inc.; and C. M. Conway, U.S. Geological Survey. (Volcanogenic massive-sulfide map series.). 1988. Lat about 32° to 37°, long 109° to about 115°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 31 by 39 inches.

MF-1867. CALIFORNIA. Map showing landslides in California that have caused fatalities or at least $1,000,000 in damages from 1906 to 1984, by Fred Taylor, and E. E. Brabb. 1986. Lat 33° to 42°, long 115° to 124°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 41 by 52 inches. (Reprint.)

MF-1877-B. NEVADA. Regional geochemical maps of the Tonopah 1° by 2° Quadrangle, Nevada, based on samples of stream sediment and nonmagnetic heavy-mineral concentrate, by J. T. Nash, and D. F. Siems. 1988. Two sheets. Lat 38° to 39°, long 116° to 118°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 1, 42 by 46 inches; sheet 2, 41 by 44 inches.

MF-1897. NEVADA. Logs of trenches across the Beatty Scarp, Nye County, Nevada, by W C Swadley, U.S. Geological Survey; H. E. Huckins, Fenix and Scisson; and E. M. Taylor, U.S. Geological Survey. 1986. Sheet 40 by 41 inches. (Reprint.)

MF-1921-A. NEW MEXICO. Mineral resource potential map of the Pecos Wilderness, Santa Fe, San Miguel, Mora, Rio Arriba, and Taos counties, New Mexico, by R. H. Moench, U.S. Geological Survey; and M. E. Lane, U.S. Bureau of Mines. 1988. Lat 35°37'30" to 36°07'30", long about 105°22'30" to 105°52'30". Scale 1:48,000 (1 inch = 4,000 feet). Sheet 38 by 55 inches. (Accompanied by 15-page text.)

MF-1921-B. NEW MEXICO. Geologic map of the Pecos Wilderness, Santa Fe, San Miguel, Mora, Rio Arriba, and Taos counties, New Mexico, by R. H. Moench, U.S. Geological Survey; J. A. Grambling, University of New Mexico; and J. M. Robertson, New Mexico Bureau of Mines and Mineral Resources. 1988. Two sheets. Sheet 1, lat about 35°37'30" to 36°07'30", long about 105°23' to 105°52'30". Scale 1:48,000 (1 inch = 4,000 feet). Sheet 1, 40 by 53 inches; sheet 2, 33 by 42 inches.

MF-1921-C. NEW MEXICO. Geochemical maps of the Pecos Wilderness and adjacent areas, Santa Fe, San Miguel, Mora, Rio Arriba, and Taos counties, New Mexico, by R. H. Moench, S. J. Sutley, and M. S. Erickson. 1988. Three sheets. Sheet 1, lat about 35°37'30" to about 36°07'30", long about 105°23' to 105°52'30"; sheet 2, lat about 35°37'30" to about 36°03'30", long about 105°23' to 105°52'30"; sheet 3, lat about 35°37'30" to about 36°03'30", long about 105°23' to 105°52'30". Sheet 1, scale 1:48,000 (1 inch = 4,000 feet); sheet 2, scale 1:96,000 (1 inch = 8,000 feet); sheet 3, scale 1:96,000 (1 inch = 8,000 feet). Sheet 1, 40 by 53 inches; sheet 2, 36 by 58 inches; sheet 3, 30 by 58 inches.

MF-1924. Map showing geology and rock geochemistry of the Puquio porphyry copper prospect, Santiago de Chocorvos Quadrangle, Peru, by N. J Page, Fredy Huanqui, R. E. Learned, Alberto Caballero, and Edgardo Guisado. 1988. Two sheets. Lat 13°56'07"S to 13°52'07"S, long 52°21'48" to 75°25'. Sheet 1, 32 by 40 inches; sheet 2, 33 by 38 inches.

MF-1925. MONTANA. Generalized geologic map of the Butte 1° by 2° Quadrangle, Montana, compiled by C. A. Wallace. 1987. Lat 46° to 47°, long 112° to 114°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 29 by 37 inches.

MF-1939-B. Maps showing the Quaternary geology of east-central Long Island Sound, by S. W. Needell, U.S. Geological Survey; R. S. Lewis, Connecticut Geological and Natural History Survey; and S. M. Colman, U.S. Geological Survey. 1987. Three sheets. Lat about 41° to about 41°15', long 72°30' to 73°. Scale 1:125,000 (1 inch = about 2 miles). Sheet 1, 44 by 47 inches; sheet 2, 35 by 48 inches; sheet 3, 33 by 34 inches. (Accompanied by 6-page text.)

MF-1941. CALIFORNIA, NEVADA. Surficial geologic map of the Resting Spring and Nopah ranges, Inyo County, California, and Nye County, Nevada, by M. A. McKittrick. 1988. Lat about 35°52' to 36°20', long 116° to 116°25'. Scale 1:62,500 (1 inch about 1 mile). Sheet 34 by 42 inches.

MF-1946-A. GEORGIA. Geologic map of the Rabun Bald Roadless Area, Rabun County, Georgia, by J. D. Peper, and W. J. Moore. 1988. Lat 34°52'30" to 35°, long 83°15' to 83°22'30". Scale 1:48,000 (1 inch = 4,000 feet). Sheet 36 by 37 inches.

MF-1946-B. GEORGIA. Geochemical survey and mineral resource assessment of the Rabun Bald Roadless Area, Rabun County, Georgia, by W. J. Moore, J. D. Peper, and J. C. Jackson. 1988. Lat 34°52'30" to 35°, long about 83°15' to about 82°22'30". Scale 1:48,000 (1 inch = 4,000 feet). Sheet 41 by 55 inches.

MF-1978-B. SOUTH DAKOTA, WYOMING. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in parts of the Tinton and Old Baldy Mountain 7 1/2-minute quadrangles, Black Hills, South Dakota and Wyoming, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44°20' to 44°27'30", long 104° to 104°07'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 54 inches.

MF-1978-C. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Spearfish 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44°22'30" to 44°30', long 103°45' to 103°52'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 40 by 54 inches.

MF-1978-D. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Savoy 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44°15' to 44°22'30", long 103°52'30" to 104°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 49 inches.

MF-1978-E. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Lead 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44°15′ to 44°22′ 30″, long 103°45′ to 103°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 30 by 45 inches. (Accompanied by 82-page text.)

MF-1978-F. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Deadwood South 7 1/2-minute Quadrangle and part of the Deadman Mountain 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44°15′ to 44°22′30″, long 103°37′30″ to 103°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 49 inches. (Accompanied by 49-page text.)

MF-1978-G. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Minnesota Ridge 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44°07′ 30″ to 44°15′, long 103°37′30″ to 103°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 41 inches.

MF-1978-H. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Rochford 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44° to 44°07′30″, long 103°37′30″ to 103°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 30 by 41 inches.

MF-1978-I. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Silver City 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 44° to 44°07′30″, long 103°30′ to 103°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 34 inches.

MF-1978-J. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Hill City 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 43°52′ 30″ to 44°, long 103°30′ to 103°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 49 inches.

MF-1978-K. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Mount Rushmore 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 43°52′ 30″ to 44°, long 103°22′30″ to 103°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 55 inches.

MF-1978-L. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Berne 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 43°45′ to 43°52′ 30″, long 103°37′30″ to 103°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 46 inches.

MF-1978-M. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Custer 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 43°45′ to 43°52′ 30″, long 103°30′ to 103°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 46 inches.

MF-1978-N. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in parts of the Iron Mountain and Hayward 7 1/2-minute quadrangles, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat about 43°49′ to 43°52′30″, long 103°15′ to 103°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 32 by 34 inches.

MF-1978-O. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Fourmile 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat 43°37′ 30″ to 43°45′, long 103°37′30″ to 103°45′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 29 by 41 inches.

MF-1978-P. SOUTH DAKOTA. Map showing locations of mines, prospects, and patented mining claims, and classification of mineral deposits in the Cicero Peak 7 1/2-minute Quadrangle and part of the Pringle 7 1/2-minute Quadrangle, Black Hills, South Dakota, by Ed DeWitt, David Buscher, A. B. Wilson, and Thomas Johnson. 1988. Lat about 43°34′ to 43°45′, long 103°30′ to 103°37′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 37 by 39 inches.

MF-1979. SOUTH CAROLINA. Geology, geochemistry, and mineral resource assessment of the Long Creek Roadless Area, Oconee County, South Carolina, by Henry Bell, III. 1987. Lat 34°45′ to about 34°49′30″, long 83°15′ to 83°20′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 32 by 44 inches.

MF-1984. Maps showing distribution of the Middle Cretaceous unconformity in the eastern Gulf of Mexico, by L. M. Massingill, and R. H. Wells. 1987. Lat 23° to 31°, long 80° to 90°. Scale 1:2,500,000 (1 inch = about 40 miles). Sheet 43 by 57 inches.

MF-1985-A. GEORGIA. Geologic map of the Worley Ridge Roadless Area, Rabun County, Georgia, by F. G. Lesure, and J. D. Peper. 1987. Lat about 34°47′30″ to about 34°50′, long about 83°27′30″ to about 83°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 22 by 35 inches.

MF-1985-B. GEORGIA. Geochemical survey and mineral resource assessment of the Worley Ridge Roadless Area, Rabun County, Georgia, by F. G. Lesure, J. P. D'Agostino, and J. D. Peper. 1987. Lat about 34°47′30″ to about 34°50′, long about 83°27′30″ to about 83°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 40 by 45 inches.

MF-1990. UTAH. Map of fault scarps formed on unconsolidated sediments, Tooele 1° by 2° Quadrangle, northwestern Utah, by T. P. Barnhard, and R. L. Dodge. 1988. Lat 40° to 41°, long 112° to 114°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 41 by 54 inches.

MF-1991. WYOMING. Map showing principal coal beds of the Clearmont Quadrangle, Sheridan County, Powder River basin, Wyoming, by C. L. Molnia. 1988. Lat 44°37′30″ to 44°45′ , long 106°22′30″ to 106°30′. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 28 inches.

MF-1992. ALASKA. Map showing mineral occurrences and indicators in the Baird Mountains Quadrangle, northwestern Alaska, by J. M. Schmidt, and G. L. Allegro. 1988. Lat 67° to about 68°, long 159° to about 162°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 24 by 31 inches. (Accompanied by 19-page text.)

MF-1993. ALASKA. Interpretive geologic map and supporting radiolarian data from the Angayucham Terrane, Coldfoot area, southern Brooks Range, Alaska, by D. L. Jones, University of California; P. J. Coney, University of Arizona; T. A. Harms; Amherst College; and J. T. Dillon, Alaska Division of Geological and Geophysical Surveys. 1988. Lat about 66°45′ to about 67°15′, long about 149° to about 150°50′. Scale 1:63,360 (1 inch = 1 mile). Sheet 40 by 53 inches.

MF-1995. CALIFORNIA. Geologic map of the San Andreas fault zone in the Cholame Valley and Cholame Hills quadrangles, San Luis Obispo and Monterey counties, California, by J. D. Sims. 1988. Lat 35°45′ to 35°52′30″, long 120°15′ to 120°27′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 39 by 49 inches.

MF-1997. COLORADO, UTAH. Stratigraphic sections of lower Tertiary strata and charts showing palynomorph and mollusk assemblages, Douglas Creek Arch area, Colorado and Utah, by R. C. Johnson, D. J. Nichols, and J. H. Hanley. 1988. Two sheets. Sheet 1, 42 by 58 inches; sheet 2, 40 by 57 inches.

MF-1999. CALIFORNIA. Mineral resources and resource potential map of the Pyramid Peak Roadless Area, Riverside County, California, by J. P. Calzia. 1988. Lat about 33°33′ to about 33°43′, long about 116°25′ to about 116°37′. Scale 1:62,500 (1 inch = about 1 mile). Sheet 26 by 29 inches.

MF-2000. Reconnaissance geologic map of the Loreto and part of the San Javier quadrangles, Baja California Sur, Mexico, by Hugh McLean. 1988. Lat 25°50′ to 26°15′, long 111°20′ to 111°40′. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 38 by 52 inches. (Accompanied by 10-page text.)

MF-2002. VERMONT. Geochemical survey of the Mt. Ascutney region, Windsor County, Vermont, by L. J. Cox. 1987. Lat about 43°23′ to about 43°28′, long about 72°23′ to about 72°35′ . Sheet 42 by 50 inches.

MF-2004. ALASKA. Reinterpreted geologic map and fossil data, Charley River Quadrangle, east-central Alaska, by J. H. Dover, and R. T. Miyaoka. 1988. Two sheets. Lat 65° to 66°, long 141° to 144°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 1, 30 by 37 inches; sheet 2, 31 by 51 inches.

MF-2008-B. UTAH, COLORADO. Surface vitrinite-reflectance map of the Uinta, Piceance, and Eagle basins area, Utah and Colorado, by V. F. Nuccio, and R. C. Johnson. 1988. Lat 38° to 41°, long 108° to 113°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 34 by 50 inches. (Accompanied by 21-page text.)

MF-2016. WASHINGTON. Geologic map of the Redmond Quadrangle, King County, Washington, by J. P. Minard, and D. B. Booth. 1988. Lat 47°37′30″ to 47°45′, long 122° to 122°07′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 30 by 44 inches.

MF-2017. MONTANA. Photogeologic and reconnaissance geologic map of the Circle L Creek Quadrangle, Custer County, Montana, by S. J. Luft. 1988. Lat 46°07′30″ to 46°15′, long 105°45′ to 105°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 28 inches.

MF-2018. MONTANA. Photogeologic and reconnaissance geologic map of the Jack Creek Quadrangle, Custer County, Montana, by S. J. Luft. 1988. Lat 46° to 46°07′30″, long 105°45′ to 105°52′30″. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 28 inches.

MF-2019. MONTANA. Photogeologic and reconnaissance geologic map of the Garland School Quadrangle, Custer County, Montana, by S. J. Luft. 1988. Lat 46° to 46°07′30″, long 105°52′30″ to 106°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 28 inches.

MF-2020. MONTANA. Photogeologic and reconnaissance geologic map of the Jack Creek NW Quadrangle, Custer County, Montana, by S. J. Luft. 1988. Lat 46°07′30″ to 46°15′, long 105°52′30″ to 106°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 28 inches.

MF-2023. CALIFORNIA, ARIZONA, NEVADA. Aeromagnetic maps of the Colorado River region including the Kingman, Needles, Salton Sea, and El Centro 1° by 2° quadrangles, California, Arizona, and Nevada, by John Mariano, and V. J. Grauch. 1988. Three sheets. Sheet 1, lat 35° to 36°, long 114° to 116°; sheet 2, lat 32°30′ to 34°, long 114° to 116°; sheet 3 (two maps): lat 32°30′ to 36°, long 114° to 116°, and lat 34° to 35°, long 114° to 116°. Scale 1:250,000 (1 inch = about 4 miles). One map, scale 1:750,000 (1 inch = about 12 miles). Sheet 1, 38 by 50 inches; sheet 2, 42 by 58 inches; sheet 3, 34 by 44 inches.

MF-2024. ALASKA. Bedrock geologic map of the Angayucham Mountains, Alaska, by J. S. Pallister, and Christine Carlson. 1988. Lat 66°50′ to 67°, long 155° to about 156°15′. Scale 1:63,360 (1 inch = 1 mile). Sheet 42 by 57 inches.

MF-2025. NEVADA. Geologic map of Oligocene and Miocene volcanic rocks, Paradise Peak and western part of the Ione quadrangles, Nye County, Nevada, by D. A. John. 1988. Two sheets. Sheet 1, lat about 38°50′ to 39°, long about 117°42′ to about 117°50′; sheet 2, lat 38°45′ to about 38°50′, long 117°45′ to 118°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 1, 42 by 44 inches; sheet 2, 34 by 42 inches.

MF-2027. Map and tabulation of Quaternary mass movements along the United States-Canadian Atlantic continental slope from 32°00′ to 47°00′N latitude, by J. S. Booth, D. W. O'Leary, Peter Popenoe, J. M. Robb, and B. A. McGregor. 1988. Three sheets. Sheet 1, lat 32° to 47°, long 56° to about 76°. Scale 1:2,000,000 (1 inch = about 32 miles). Sheet 1, 40 by 51 inches; sheet 2, 35 by 52 inches; sheet 3, 30 by 50 inches.

MF-2028. NEVADA. Geologic map of the Yellow Hills West Quadrangle, Washoe County, Nevada, by J. A. Ach. 1988. Lat 41°22'30" to 41°30', long 119°22'30" to 119°30'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 32 inches.

MF-2029. NEVADA. Geologic map of the Yellow Hills East Quadrangle, Washoe and Humboldt counties, Nevada, by J. A. Ach. 1988. Lat 41°22'30" to 41°30', long 119°15' to 119°22' 30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 26 by 32 inches.

MF-2030. SOUTH CAROLINA. Map showing Mesozoic diabase dikes in South Carolina described since 1960, by Henry Bell, III. 1988. Lat 34° to about 35°, long 80° to about 83°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 42 by 58 inches.

MF-2031. WYOMING, COLORADO, UTAH. Structure contour map of the Greater Green River basin, Wyoming, Colorado, and Utah, by M. R. Lickus, and B. E. Law. 1988. Lat about 40° to about 44°, long about 107° to about 111°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 35 by 48 inches.

MF-2032. MISSOURI. Geologic map of exposed Precambrian rocks, Des Arc NE Quadrangle, Iron and Madison counties, Southeast Missouri, by V. M. Brown, University of Toledo, Ohio. 1988. Lat 37°22'30" to 37°30', long 90°30' to 90°37'30". Scale 1:24,000 (1 inch = 2,000 feet). Sheet 33 by 53 inches.

MF-2033. NEW MEXICO. Geologic map of the Cerro del Oro Quadrangle, Cibola County, New Mexico, by C. H. Maxwell. 1988. Lat 34°37'30" to 34°45', long 107°22'30" to 107°30'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 28 by 28 inches.

MF-2034. TEXAS. Seismicity map of the State of Texas, by B. G. Reagor, C. W. Stover, and S. T. Algermissen. 1988. Two sheets. Lat 26° to 34°, long 94° to 106°. Sheet 1, 41 by 51 inches; sheet 2, 25 by 30 inches. (Supersedes MF-1388.)

MF-2035. NEW MEXICO. Seismicity map of the State of New Mexico, by C. W. Stover, B. G. Reagor, and S. T. Algermissen. 1988. Lat 31° to 37°, long 103° to 109°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 38 by 54 inches. (Supersedes MF-1660.)

MF-2036. COLORADO. Seismicity map of the State of Colorado, by C. W. Stover, B. G. Reagor, and S. T. Algermissen. 1988. Lat 37° to 41°, long 102° to 109°. Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 38 by 45 inches. (Supersedes MF-1694.)

MF-2037. Heavy-mineral placer potential map of the U.S. continental shelf, western and northern Gulf of Mexico, by G. L. Shideler. 1988. Lat 26° to about 30°, long about 88° to about 97°. Sheet 42 by 42 inches.

MF-2039. MONTANA. Preliminary geologic map of the Yellowtail Dam Quadrangle, Big Horn County, Montana, by S. S. Agard. 1988. Lat 45°15' to 45°22'30", long 107°52'30" to 108°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 32 inches.

MF-2040. NEW MEXICO. Preliminary geologic map of the Newcomb Quadrangle, San Juan County, New Mexico, by R. B. O'Sullivan, and J. D. Strobell, Jr. 1988. Lat 36°15' to 36°22' 30", long 108°37'30" to 108°45'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 31 by 34 inches.

MF-2041. MONTANA. Geologic map of the northeast flank of the Blacktail Mountains, Beaverhead County, Montana, by R. G. Tysdal. 1988. Lat 44°55' to 45°08', long about 112°25' to 112°45'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 42 by 53 inches.

MF-2042. UTAH. Preliminary surficial geologic map of the Brigham City segment and adjacent parts of the Weber and Collinston segments, Wasatch fault zone, Box Elder and Weber counties, Utah, by S. F. Personius. 1988. Lat 41°17'30" to 41°45', long 111°52'30" to 112°08'11". Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 40 by 54 inches.

MF-2043. MARYLAND. Map showing radon potential of rocks and soils in Montgomery County, Maryland, by L. C. Gundersen, G. M. Reimer, C. R. Wiggs, and C. A. Rice. 1988. Lat 38°55' to 39°20', long 76°55' to 77°30'. Scale 1:62,500 (1 inch = about 1 mile). Sheet 42 by 55 inches.

MF-2045. UTAH. Map showing wallrock alteration and geology of the Dugway mining district, northern Dugway Range, Tooele County, Utah, by D. L. Kelley, and R. A. Yambrick. 1988. Lat about 39°57' to 40°01'30", long about 113°08'30" to about 113°14'. Scale 1:12,000 (1 inch = 1,000 feet). Sheet 37 by 43 inches.

MF-2047. VIRGINIA. Map showing radon potential of rocks and soils in Fairfax County, Virginia, by J. K. Otton, R. R. Schumann, D. E. Owen, U.S. Geological Survey; Nelson Thurman, Fairfax County Department of Extension and Continuing Education; and J. S. Duval, U.S. Geological Survey. 1988. Lat about 38°35' to about 39°04', long about 77°10' to about 77°30'. Scale 1:48,000 (1 inch = 4,000 feet). Sheet 41 by 51 inches.

MF-2049. NEW MEXICO. Geologic map of the Marmon Ranch Quadrangle, Cibola County, New Mexico, by C. H. Maxwell. 1988. Lat 34°45' to 34°52'30", long 107°22'30" to 107°30'. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 26 by 28 inches.

MF-2052. UTAH. Geologic map showing a late Cenozoic basaltic intrusive complex, Emery, Sevier, and Wayne counties, Utah, by A. E. Gartner, and P. T. Delaney. 1988. Lat about 38°20' to 38°50', long 111° to about 111°25'. Scale 1:48,000 (1 inch = 4,000 feet). Sheet 35 by 50 inches.

MF-2053. NEVADA. Geologic map of the Little Humboldt River Wilderness Study Area, Elko County, Nevada, by A. R. Wallace. 1988. Lat about 41°15' to 41°27'30", long 116°45' to 117°. Scale 1:50,000 (1 inch = about 4,200 feet). Sheet 24 by 33 inches.

MF-2054. OKLAHOMA. Cross sections based on gamma-ray, density, and resistivity logs showing stratigraphic units of the Woodford Shale, Anadarko Basin, Oklahoma, by T. C. Hester, H. L. Sahl, and J. W. Schmoker. 1988. Two sheets. Sheet 1, 38 by 54 inches; sheet 2, 33 by 53 inches.

MF-2059. COLORADO. Reconnaissance geologic map of the Horsefly Peak Quadrangle, Ouray, Montrose, and San Miguel counties, Colorado, by W. J. Hail, Jr. 1988. Lat 38°07'30" to 38°15', long 107°52'30" to 108°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 27 by 29 inches. (Geology mapped in 1967.)

MF-2060. COLORADO. Geologic map of the Rulison Quadrangle, Garfield County, Colorado, by W. E. Yeend, J. R. Donnell, and M. C. Smith. 1988. Lat 39°22′30″ to 39°30′, long 107°52′30″ to 108°. Scale 1:24,000 (1 inch = 2,000 feet). Sheet 31 by 32 inches.

GEOLOGIC MAP INDEXES

CALIFORNIA. Geologic map index of California, revised and updated by H. K. Fuller, 1987, from original compilation by W. L. McIntosh and M. F. Eister. 1978.

IDAHO. Geologic map index of Idaho, revised and updated by H. K. Fuller, 1988, from original compilation by W. L. McIntosh and M. F. Eister. 1975.

ILLINOIS. Geologic map index of Illinois, revised and updated by H. K. Fuller, 1987, from original compilation by W. L. McIntosh and M. F. Eister. 1977.

INDIANA. Geologic map index of Indiana, revised and updated by H. K. Fuller, 1987, from original compilation by W. L. McIntosh and M. F. Eister. 1977.

IOWA. Geologic map index of Iowa, revised and updated by H. K. Fuller, 1987, from original compilation by W. L. McIntosh and M. F. Eister. 1976.

MARYLAND, DELAWARE, DISTRICT OF COLUMBIA. Geologic map index of Maryland, Delaware, and the District of Columbia, revised and updated by H. K. Fuller, 1987, from original compilation by W. L. McIntosh, M. F. Eister and D. M. Sparks. 1982.

OHIO. Geologic map index of Ohio, revised and updated by H. K. Fuller, 1987, from original compilation by W. L. McIntosh, M. F. Eister and D. M. Sparks. 1979.

HYDROLOGIC INVESTIGATIONS ATLASES

Multicolored or black and white maps on topographic or planimetric bases presenting a wide range of geohydrologic data; both regular and irregular areas; principal scale 1:24,000 or 1:48,000, regional studies at 1:250,000 scale or smaller.

HA-0543. MINNESOTA. Water resources of the Zumbro River watershed, southeastern Minnesota, by H. W. Anderson, Jr., D. F. Farrell, W. L. Broussard, and M. F. Hult. 1975. Three sheets. Lat about 44° to about 44°30′, long about 92° to about 93°. Each sheet, 34 by 42 inches. (Reprint.)

HA-0672. FLORIDA. Forest map and hydrologic conditions, Apalachicola River flood plain, Florida, by H. M. Leitman. 1984. Lat about 30° to about 31°, long about 84°30′ to about 85°. Sheet 39 by 58 inches. (Reprint.)

HA-0703. IDAHO, OREGON. Configuration of the water table and depth to water, spring 1980, water-level fluctuations, and water movement in the Snake River plain regional aquifer system, Idaho and eastern Oregon, by G. F. Lindholm, S. P. Garabedian, G. D. Newton, and R. L. Whitehead. 1988. Lat 42°15′ to 44°30′, long 111°30′ to 118°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 35 by 44 inches. (Supersedes Open-file report 86-149.)

HA-0707. OKLAHOMA. Flood of May 26-27, 1984 in Tulsa, Oklahoma, by D. L. Bergman, and R. L. Tortorelli. 1988. Lat about 35°57′30″ to about 36°15′, long about 95°45′ to about 96°07′30″. Scales 1:96,000 (1 inch = 8,000 feet) and 1:48,000 (1 inch = 4,000 feet). Sheet 37 by 58 inches.

HA-0710. Average annual runoff in the United States, 1951-80, by W. A. Gebert, D. A. Graczyk, and W. R. Krug. 1987. Lat 18° to 70°, long 65° to W175°. Scale 1:7,500,000 (1 inch = about 118 miles). Sheet 34 by 44 inches. (Supersedes Open-file report 85-627.)

HYDROLOGIC UNIT MAPS

ILLINOIS. Hydrologic unit map. 1974. State of Illinois. Lat 37° to about 42°30′, long about 87°30′ to about 91°30′. Scale 1:500,000 (1 inch = about 8 miles). Sheet 31 by 52 inches. (Reprint.)

KENTUCKY. Hydrologic unit map. 1974. State of Kentucky. Lat about 36°30′ to about 39°, long 82° to about 89°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 27 by 57 inches. (Reprint.)

MICHIGAN. Hydrologic unit map. 1974. State of Michigan. Two sheets. Sheet 1, lat about 42° to 45°, long about 83° to about 87°; sheet 2, lat 45° to about 48°30′, long about 82°30′ to about 90°. Scale 1:500,000 (1 inch = about 8 miles). Each sheet 33 by 54 inches. (Reprint.)

NEW HAMPSHIRE, VERMONT. Hydrologic unit map. 1974. States of New Hampshire and Vermont. Lat about 42°45′ to about 45°15′, long about 70°55′ to about 73°15′. Scale 1:500,000 (1 inch = about 8 miles). Sheet 28 by 30 inches. (Reprint.)

WISCONSIN. Hydrologic unit map. 1974. State of Wisconsin. Lat about 42°30′ to 47°, long about 87° to about 93°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 44 by 46 inches. (Reprint.)

CALIFORNIA. Hydrologic unit map. 1978. State of California. Two sheets. Lat about 32° to 42°, long about 114° to about 124°. Scale 1:500,000 (1 inch = about 8 miles). Each sheet, 47 by 64 inches. (Reprint.)

OHIO. Hydrologic unit map. 1988. State of Ohio. Lat about 38°30′ to 42°, long about 80°45′ to 85°. Scale 1:500,000 (1 inch = about 8 miles). Sheet 37 by 39 inches.

LAND USE AND LAND COVER MAPS

L-0205. ALASKA. Meade River, Alaska, vegetation and land cover, 1975-76, by U.S. Geological Survey in cooperation with the U.S. Bureau of Land Management. 1988. Lat 70° to 71°, long 156° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 22 by 29 inches.

L-0206. ALASKA. Mt. Michelson, Alaska, vegetation and land cover, 1976-81, by U.S. Geological Survey in cooperation with the U.S. Fish and Wildlife Service and the U.S. Army Cold Regions Research and Engineering Laboratory. 1988. Lat 69° to 70°, long 144° to 147°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 22 by 29 inches.

L-0208. ALASKA. Fairbanks, Alaska, vegetation and land cover, 1977-79, by U.S. Geological Survey in cooperation with the U.S. Forest Service. 1988. Lat 64° to 65°, long 147° to 150°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 22 by 29 inches.

L-0210. ALASKA. Dillingham, Alaska, vegetation and land cover, 1974-77, by U.S. Geological Survey in cooperation with the Alaska Department of Natural Resources. 1988. Lat 59° to 60°, long 156° to 159°. Scale 1:250,000 (1 inch = about 4 miles). Sheet 23 by 40 inches.

OUTSIDE PUBLICATIONS

ARTICLES AND REPORTS

Articles by Geological Survey personnel in non-Geological Survey publications that came to our attention in 1987. Non-Geological Survey personnel who share authorship in articles with U.S. Geological Survey personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

OP-1. Ulrich Achauer, J. R. Evans and D. A. Stauber*. OREGON. High-resolution seismic tomography of compressional wave velocity structure at Newberry Volcano, Oregon Cascade Range. Journal of Geophysical Research, B, Solid Earth and Planets, *in* Special section on Newberry Volcano (D. V. Fitterman, editor). v. 93, no. 9, September 10, 1988. p. 10,135-10,147.

OP-2. D. P. Adam. CALIFORNIA. Pollen zonation and proposed informal climatic units for Clear Lake, California, cores CL-73-4 and CL-73-7. Special Paper - Geological Society of America, *in* Late Quaternary climate, tectonism, and sedimentation in Clear Lake, Northern California Coast Ranges (J. D. Sims, editor). 214, 1988. p. 63-80.

OP-3. D. P. Adam. CALIFORNIA. Correlations of the Clear Lake, California, Core CL-73-4 pollen sequence with other long climate records. Special Paper - Geological Society of America, *in* Late Quaternary climate, tectonism, and sedimentation in Clear Lake, Northern California Coast Ranges (J. D. Sims, editor). 214, 1988. p. 81-95.

OP-4. W. O. Addicott and George Gryc. The circum-Pacific map project; status update, 1987, *in* Pacific Rim congress 87; an international congress on the geology, structure, mineralisation and economics of the Pacific Rim (Edward Brennan, convenor). Parkville, Victoria: Australas. Inst. Min. and Metall., 1987. p. 503-506.

OP-5. R. H. Affolter and G. D. Stricker. ALASKA. Offshore Alaska coal. Circum-Pacific Council for Energy and Mineral Resources, Earth Science Series, *in* Geology and resource potential of the continental margin of western North America and adjacent ocean basins, Beaufort Sea to Baja California (D. W. Scholl, editor and others). 6, 1987. p. 639-647.

OP-6. R. H. Affolter and G. D. Stricker. ALASKA. Geochemistry of coal from the Cretaceous Corwin and Chandler formations, National Petroleum Reserve in Alaska (NPRA). Field Trip Guidebook - Pacific Section, Society of Economic Paleontologists and Mineralogists, *in* Alaskan North Slope geology (I. L. Tailleur, editor and others). 50, October 1, 1987. p. 217-224.

OP-7. J. C. Aitchison*, M. C. Blake, Jr., P. G. Flood* and B. L. Murchey. New and revised lithostratigraphic units from the southwestern New England fold belt. Quarterly Notes - Geological Survey of New South Wales. 72, July 1, 1988. p. 10-16.

OP-8. J. P. Albers, J. E. Case, R. W. Bowen, D. A. Singer, B. R. Berger, D. P. Cox, C. A. Hodges, Fernando Etayo-Serna*, Darío Barrero Lozano*, Hernando Lozano Quiroga*, Armando Espinosa Baquero*, Humberto González Iregui*, Abigail Orrego López*, Alfonso Arias Tauta*, Carlos Cedeño Ochoa*, O. H. Pulido Ulloa*, Alvaro Murillo Rodriguez*, Manuel José Díaz*, Francisco Zambrano-Ortiz*, Hermann Duque-Caro*, Rodrigo Vargas Higuera*, Alberto Tello Núñez*, Jairo Alvarez Agudelo*, Clemente Ropain Ulloa*, Joaquín Buenaventura Arango*, Hernando Mendoza Forero*, Gloria Rodríguez Sierra*, Luis Jaramillo Corté*, Colombia, Instituto Nacional de Investigaciones Geologico-Mineras and U.S. Geological Survey . Evaluation of noncombustible mineral resources of Colombia. Publicaciones Geológicas Especiales del INGEOMINAS. 14-2, 1983. 55 p.

OP-9. R. B. Alexander and R. A. Smith. Trends in lead concentrations in major U.S. rivers and their relation to historical changes in gasoline-lead consumption. Water Resources Bulletin (Urbana), *in* Nonparametric approaches to environmental impact assessment (K. W. Hipel, editor). v. 24, no. 3, June 1988. p. 557-569.

OP-10. C. S. Alger and S. D. Ellen. CALIFORNIA. Zero-order basins shaped by debris flows, Sunol, California, USA. IAHS-AISH Publication, *in* Proceedings of an international symposium on Erosion and sedimentation in the Pacific Rim (R. L. Beschta, editor and others). 165, 1987. p. 111-119.

OP-11. L. R. Alldredge. Geomagnetic parameters derived from an analytic description of the Earth's magnetic field. Journal of Geomagnetism and Geoelectricity. v. 40, no. 2, 1988. p. 207-219.

OP-12. W. M. Alley. A note on stagewise regression. The American Statistician. v. 41, no. 2, May 1987. p. 132-134.

OP-13. W. M. Alley. Using exogenous variables in testing for monotonic trends in hydrologic time series. Water Resources Research. v. 24, no. 11, November 1988. p. 1955-1961.

OP-14. S. P. Altaner, J. J. Fitzpatrick, M. D. Krohn, P. M. Bethke, D. O. Hayba, J. A. Goss and Z. A. Brown. Ammonium in alunites. American Mineralogist. v. 73, no. 1-2, February 1988. p. 145-152.

OP-15. J. J. Anderson*, T. A. Iivari* and P. D. Rowley. UTAH. Geologic map of the Little Creek Peak Quadrangle, Garfield and Iron counties, Utah. Geologic Map - Utah Geological and Mineral Survey. 104, 1987. 11 p., 1 sheet.

OP-16. J. J. Anderson and P. D. Rowley. UTAH. Geologic map of the Panguitch NW Quadrangle, Iron and Garfield counties, Utah. Geologic Map - Utah Geological and Mineral Survey. 103, 1987. 8 p., 1 sheet.

OP-17. J. L. Anderson*, M. H. Beeson*, R. D. Bentley*, K. R. Fecht*, P. R. Hooper*, A. R. Niem*, S. P. Reidel*, D. A. Swanson*, T. L. Tolan* and T. L. Wright. WASHINGTON. Distribution maps of stratigraphic units of the Columbia River Basalt group. Bulletin - Washington Department of Natural Resources, Division of Geology and Earth Resources, *in* Selected papers on the geology of Washington (J. E. Schuster, editor). 77, 1987. p. 183-195.

OP-18. R. Y. Anderson* and W. E. Dean. Lacustrine varve formation through time. Palaeogeography, Palaeoclimatology, Palaeoecology, *in* Aspects of freshwater paleoecology and biogeography (Jane Gray, editor). v. 62, no. 1-4, January 1988. p. 215-235.

OP-19. A. S. Andrew* and J. R. O'Neil. Role of fluids during contact metamorphism; stable isotope evidence from the Rockley Volcanics, eastern Australia. American Journal of Science, *in* Frontiers in petrology (A. K. Sinha, editor and others). v. 288, 1988. p. 490-511.

OP-20. E. D. Andrews. MONTANA. Longitudinal dispersion of trace metals in the Clark Fork River, Montana, *in* Chemical quality of water and the hydrologic cycle (R. C. Averett, editor and others). Chelsea, MI: Lewis Publ., 1987. p. 179-191.

OP-21. E. D. Andrews and G. Parker*. Formation of a coarse surface layer as the response to gravel mobility, *in* Sediment transport in gravel-bed rivers (C. R. Thorne, editor and others). Chichester: John Wiley & Sons, 1987. p. 269-325.

OP-22. G. W. Andrews and P. Rivera*. Morphology and evolutionary significance of Adoneis pacifica gen. et sp. nov. (Fragilariaceae, Bacillariophyta), a marine araphid diatom from Chile. Diatom Research. v. 2, no. 1, September 1987. p. 1-14.

OP-23. L. M. Anovitz*, B. S. Hemingway, E. F. Westrum, Jr.*, G. W. Metz* and E. J. Essene*. Heat capacity measurements for cryolite (Na_3AlF_6) and reactions in the system Na-Fe-Al-Si-O-F. Geochimica et Cosmochimica Acta. v. 51, no. 12, December 1987. p. 3087-3103.

OP-24. D. H. Appel. WEST VIRGINIA. Solute traveltime and dispersion in the New River, West Virginia, *in* Proceedings, New River symposium (Neil De Jong, chairperson and others). Boone, NC: Appalachian State Univ., 1987. p. 59-70.

OP-25. D. H. Appel. WEST VIRGINIA. Water research needs in West Virginia. Water Resources - Water Research. winter 1988. 1988. p. 3.

OP-26. J. G. Arth, Fred Barker and T. W. Stern. ALASKA. Coast Batholith and Taku plutons near Ketchikan, Alaska; petrography, geochronology, geochemistry, and isotopic character. American Journal of Science, *in* Frontiers in petrology (A. K. Sinha, editor and others). v. 288, 1988. p. 461-489.

OP-27. M. A. Arthur*, W. E. Dean and L. M. Pratt*. Geochemical and climatic effects of increased marine organic carbon burial at the Cenomanian/Turonian boundary. Nature (London). v. 335, no. 6192, October 20, 1988. p. 714-717.

OP-28. G. M. Atkinson and D. M. Boore. On the m_N, M relation for eastern North American earthquakes. Seismological Research Letters. v. 58, no. 4, December 1987. p. 119-124.

OP-29. E. D. Attanasi and J. H. DeYoung, Jr. Physical deposit measures and commercial potential; the case of titanium-bearing heavy-mineral deposits. Mathematical Geology. v. 20, no. 2, February 1988. p. 97-110.

OP-30. B. F. Atwater, D. O. West* and D. R. McCrumb*. OREGON, WASHINGTON. Coastline uplift in Oregon and Washington and the nature of Cascadia subduction-zone tectonics. Geology (Boulder). v. 16, no. 10, October 1988. p. 952-953.

OP-31. H. G. Avé Lallemant*, J. S. Kelley and J. C. Phelps*. ALASKA. Kinematic analysis of range-front thrust faulting near Anaktuvuk Pass, north-central Brooks Range, Alaska. Field Trip Guidebook - Pacific Section, Society of Economic Paleontologists and Mineralogists, *in* Alaskan North Slope geology (I. L. Tailleur, editor and others). 50, October 1, 1987. p. 639-645.

OP-32. R. C. Averett, editor and D. M. McKnight, editor. Chemical quality of water and the hydrologic cycle. Chelsea, MI: Lewis Publ., 1987. 382 p.

OP-33. Charles Avery. IDAHO, UTAH, WYOMING. Chemistry of thermal water and estimated reservoir temperatures in southeastern Idaho, north-central Utah, and southwestern Wyoming. Guidebook - Wyoming Geological Association, *in* The thrust belt revisited (W. R. Miller, editor). 38, 1987. p. 347-353.

OP-34. R. A. Ayuso, M. F. Horan and R. E. Criss. MAINE. Pb and O isotopic geochemistry of granitic plutons in northern Maine. American Journal of Science, *in* Frontiers in petrology (A. K. Sinha, editor and others). v. 288, 1988. p. 421-460.

OP-35. C. R. Bacon and M. M. Hirschmann*. Mg/Mn partitioning as a test for equilibrium between coexisting Fe-Ti oxides. American Mineralogist. v. 73, no. 1-2, February 1988. p. 57-61.

OP-36. J. S. Bader. WEST VIRGINIA. Ground-water hydrology of the Guyandotte River basin, West Virginia. Morgantown, WV: W. Va. Dep. Nat. Resour., 1984. 1 sheet.

OP-37. A. L. Baehr and G. E. Hoag*. A modeling and experimental investigation of induced venting of gasoline-contaminated soils, *in* Soils contaminated by petroleum; environmental and public health effects (E. J. Calabrese, editor and others). New York, NY: John Wiley & Sons, 1988. p. 113-123.

OP-38. M. S. Baig*, R. D. Lawrence* and L. W. Snee. Evidence for late Precambrian to Early Cambrian orogeny in Northwest Himalaya, Pakistan. Geological Magazine. v. 125, no. 1, January 1988. p. 83-86.

OP-39. V. R. Baker* and J. E. Costa. Flood power. Binghamton Symposia in Geomorphology: International Series, *in* Catastrophic flooding (L. Mayer, editor and others). 18, 1987. p. 1-21.

OP-40. W. H. Bakun. CALIFORNIA. Historic seismicity of the Parkfield area, Monterey and San Luis Obispo counties. California Geology. v. 41, no. 3, March 1988. p. 61-62.

OP-41. W. H. Bakun. CALIFORNIA. Parkfield Earthquake Prediction Experiment; geophysical instrumentation near Parkfield. California Geology. v. 41, no. 9, September 1988. p. 205-207.

OP-42. W. H. Bakun. CALIFORNIA. Parkfield earthquake prediction alert levels. California Geology. v. 41, no. 9, September 1988. p. 207-208.

OP-43. J. D. Bales and E. R. Holley*. Analysis of estuarine tracer-gas transport and desorption, *in* Proceedings of the 1987 national conference on hydraulic engineering (R. M. Ragan, editor). New York, NY: Am. Soc. Civ. Eng., 1987. p. 974-979.

OP-44. L. S. Balistrieri and T. T. Chao. Selenium adsorption by goethite. Soil Science Society of America Journal. v. 51, no. 5, October 1987. p. 1145-1151.

OP-45. L. B. Barber, II, E. M. Thurman, M. P. Schroeder and D. R. LeBlanc. Long-term fate of organic micropollutants in sewage-contaminated groundwater. Environmental Science & Technology, ES & T. v. 22, no. 2, February 1988. p. 205-211.

OP-46. S. T. Bardelson and F. J. Beck. U.S Geological Survey multipurpose cadastre pilot project. Proceedings of the American Congress on Surveying and Mapping Fall Convention, *in* 1987 ASPRS-ACSM fall convention, ACSM technical papers. 1987, 1987. p. 36-41.

OP-47. K. E. Bargar and R. O. Fournier. WYOMING. Effects of glacial ice on subsurface temperatures of hydrothermal systems in Yellowstone National Park, Wyoming; fluid-inclusion evidence. Geology (Boulder). v. 16, no. 12, December 1988. p. 1077-1080.

OP-48. C. E. Barker and R. B. Halley. FLORIDA. Fluid inclusions in vadose cement with consistent vapor to liquid ratios, Pleistocene Miami Limestone, southeastern Florida. Geochimica et Cosmochimica Acta, *in* Proceedings of the First annual meeting of the Pan-American current research on fluid inclusions group (D. I. Norman, prefacer). v. 52, no. 5, May 1988. p. 1019-1025.

OP-49. C. E. Barker and O. C. Kopp*. New light shed on old rocks. Geotimes. v. 32, no. 10, October 1987. p. 21-22.

OP-50. C. E. Barker and M. J. Pawlewicz. TEXAS. The effects of igneous intrusions and higher heat flow on the thermal maturity of Leonardian and younger rocks, western Delaware Basin, Texas. Publication - Society of Economic Paleontologists and Mineralogists, Permian Basin Chapter, *in* The Leonardian facies in W. Texas and S.E. New Mexico and guidebook to the Glass Mountains, West Texas (Dave Cromwell, editor and others). 87-27, 1987. p. 69-84.

OP-51. Fred Barker, D. L. Jones*, J. R. Budahn and P. J. Coney*. ALASKA. Ocean plateau-seamount origin of basaltic rocks, Angayucham Terrane, central Alaska. Journal of Geology. v. 96, no. 3, May 1988. p. 368-374.

OP-52. C. R. Barnes. NEW YORK. Polychlorinated biphenyl-transport rates in the upper Hudson River, New York, 1977-83. Northeastern Environmental Science. v. 6, no. 1, 1987. p. 31-36.

OP-53. Ivan Barnes, W. C. Evans and L. D. White. The role of mantle CO_2 in volcanism. Applied Geochemistry. v. 3, no. 3, May 1988. p. 281-285.

OP-54. P. W. Barnes. Morphologic studies of the Wilkes Land continental shelf, Antarctica; glacial and iceberg effects. Circum-Pacific Council for Energy and Mineral Resources, Earth Science Series, *in* The Antarctic continental margin; geology and geophysics of offshore Wilkes Land (S. L. Eittreim, editor and others). 5A. 1987. p. 175-194.

OP-55. P. W. Barnes and Reidar Lien*. Icebergs rework shelf sediments to 500 m off Antarctica. Geology (Boulder). v. 16, no. 12, December 1988. p. 1130-1133.

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ABSTRACTS

Abstracts are condensed but informative summaries of presentations made at meetings of scientific and professional organizations. Typically they summarize the principal conclusions of an author's current work but contain little supporting data. Non-Geological Survey personnel who share authorship in abstracts with U.S. Geological Survey personnel are indicated by an asterisk (*) immediately following the name. **These publications are not available from the U.S. Geological Survey.**

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ABBREVIATIONS USED

A-	**Antarctic Geologic Map**
B	**Bulletin**
C	**Circular**
C-	**Coal Investigations Map**
CAT	**Catalogs**
CF	**Coal Maps**
EV	**Earthquakes and Volcanoes**
GN	**General Interest Publications**
GP-	**Geophysical Investigations Map**
GQ-	**Geologic Quadrangle Map**
HA-	**Hydrologic Investigations Atlas**
HUM	**Hydrologic Unit Maps**
I-	**Miscellaneous Investigations Series**
L-	**Land Use and Land Cover Map**
MF-	**Miscellaneous Field Studies Map**
MR-	**Mineral Investigations Resources Map**
MSB	**Miscellaneous and Special Books**
OC-	**Oil and Gas Investigations Chart**
OM-	**Oil and Gas Investigations Maps**
OF	**Open-File Report**
OP	**Outside Publications**
P	**Professional Paper**
PB-,ADA	**Report available only through the National Technical Information Service**
PDE	**Preliminary Determination of Epicenters**
SGM	**Special Geologic Maps**
SGMI	**Geologic Map Indexes**
SM	**Special Maps**
STM	**State Geologic Maps**
TWI	**Techniques of Water-Resources Investigations**
W	**Water-Supply Paper**
WRI	**Water-Resources Investigations**
YR	**Yearbooks**

Outside journals and books are not available from the U.S. Geological Survey.

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